MEYERTECH
SECURITY with VISION

ZoneVu

INSTALLATION and CONFIGURATION MANUAL

SERIES 3

VIDEO MATRIX SYSTEM

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Safety Precautions

1. Carefully read this Product Manual prior to commencing installation and configuration.
2. Before working on this product power it down and remove the power leads. Removing panels modules or PCBs may cause damage to the product and present an electric shock and fire hazard.
3. To reduce the risk of electric shock and fire hazard do not operate this product with panels or covers removed.
4. Do not install or operate the product near water.
5. Do not install or operate this equipment outdoors.
6. Only install this equipment into a suitable 19-inch equipment cubicle.
7. If work is carried out on the product with panels and covers removed ensure full electrostatic handling procedures are adhered to.
8. Louvers and openings are provided in the product enclosures for ventilation purposes to protect it from overheating. Under no circumstances block or cover these openings.
9. Ensure the product is operated in a suitably temperature controlled environment within the specification limits.
10. Do not operate the product in humidity greater then 90%.
11. Do not drop objects of any kind through the product louvers and openings. This may cause electric shock and fire hazard and product malfunction.
12. Avoid liquid spillages on the product. This may cause electric shock and fire hazard as well as product malfunction.
13. Never attempt to service this product yourself. This product contains no serviceable parts refer all servicing requirements to the Meyertech Service Centre or appointed Meyertech Service Agent
14. Do not operate this product if
    - 14.1. Any product power leads are damaged.
    - 14.2. If the product has been exposed to rain.
    - 14.3. If the product has been dropped or the enclosure has been damaged.
    - 14.4. If liquid has been spilt on the product.
    - 14.5. If the appliance has malfunctioned or is not operating to its functional specification.
    - 14.6. If the products cooling fans fail to operate.
15. This product must only be operated with the power supply provided or if supplied without a power supply, by the type of power source indicated in the specification.
16. Follow all warnings and instructions marked on the product and in this manual.
17. To clean the enclosure of the product, use a cloth. Do not use liquid solvent-based cleaners.

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WARNING: This product may contain hazardous mains voltages. When working on this product use extreme caution and observe Health and Safety at work practices.

THIS PRODUCT MUST BE EARTHED!

Introduction

Thank you for purchasing this product. The following instructions will guide you through the installation, and configuration of the ZoneVu Series 3 Video Matrix System. Please read this manual carefully before attempting to install and operate the product to ensure that you obtain the optimum performance from it.

Features

Designing large CCTV systems, which require a video matrix, has just got easier with the arrival of Meyertech's all new Series 3 Video Matrix System! Setting a new benchmark for others to follow, the Series 3 pushes the boundaries of video x-point routing into a new era.

- **Mega Density video matrix 16,384 x-points per 5U ZVS3-VRM module**
- **Modular matrix flexibility expandable from 128 inputs by 16 outputs to 4096 inputs by 2048 outputs**
- **Configurable on screen display via ZVS3-VTM option**
- **Bridge through video inputs as standard**
- **Ultra compact space saving design**
- **Front panel LED diagnostics display**
- **16-bit embedded processing power**
- **40MHz video Bandwidth**
- **-60dB all hostile X-talk**
- **-100dB output off isolation**
- **Video loss detection on all inputs (optional)**
- **Industry standard BNC video connections**
- **Compatible with the ZoneVu product range**
- **Remote configuration and backup via Meyertech's Mpower software**

The design of the ZoneVu Series 3 Video Matrix System uses the latest video crosspoint technology available to offer superior performance over conventional video matrix designs. The Series 3 is 100% non-blocking, which means any video input can be switched to any output or any number of outputs including all of them simultaneously.

The features described in this manual refer to the following firmware versions:

Version 1.4.0.0 of the ZVS3-VRM
Version 1.5.0.0 of the ZVS3-VTM
Version 3.22.0.0 of the ZSC-1000plus

The Series 3 integrates seamlessly into the ZoneVu system architecture by way of the ZSC-1000 site controller, which manages system communications to the Series 3. Control of the matrix can be achieved both locally and remotely from the range of ZoneVu keyboards or FUSION workstations. Third party control of the matrix is also supported with the addition of a ZSC-250 or ZSC-250-IP site gateway module.

Series 3 Modules

Overview

The ZoneVu Series 3 is a modular video matrix system comprising four main modules:

- ZVS3-VRM - the **V**ideo **R**outing **M**odule
- ZVS3-VOTM - the **V**ideo **O**utput **T**ext **M**odule
- ZVS-PSU – the **P**ower **S**upply **U**nit
- ZVS-PSU-R – the **P**ower **S**upply **U**nit for the **R**outing Module
- ZVS-PSU-O – the **P**ower **S**upply **U**nit for the **O**utput Module

A ZoneVu ZSC-1000 Site Controller controls management of the ZoneVu Series 3 video matrix, which is responsible for managing all ZoneVu equipment on a particular site.

The **ZVS3-VRM** is the video routing module. Fully carded each ZVS3-VRM can route 128 video inputs to any or all 128 video outputs. Designed to fit into a 19-inch equipment cubicle, the ZVS3-VRM is supplied in a 5U 19-inch enclosure.

Without the on screen display option, the **ZVS3-VOTM** is the final matrix module the video passes through before exiting back to the outside world. Fully carded, each ZVS3-VOTM can process 128 video outputs. Designed to fit into a 19-inch equipment cubicle, the ZVS3-VOM is supplied in a 3U 19-inch enclosure.

If the on screen display option has been selected, the **ZVS3-VOTM** takes the output from the matrix module and inserts captions onto the video picture. Fully carded, each ZVS3-VOTM can process 128 video outputs. Designed to fit into a 19-inch equipment cubicle, the ZVS3-VOTM is supplied in a 3U 19-inch enclosure.

The **ZVS-PSU-R** provides DC power to the ZVS3-VRM. A 1U 19-inch module the ZVS3-PSU-R has been designed to fit into a 19-inch equipment cubicle. From a universal AC mains supply the ZVS3-PSU provides +12VDC and –5VDC. The ZVS-PSU-RD is available as an option in place of the ZVS-PSU-R. This is a dual redundant equivalent and has power loss alarm reporting capabilities.

The **ZVS-PSU-O** provides DC power to the ZVS3-VOTM. A 1U 19-inch module the ZVS3-PSU-O has been designed to fit into a 19-inch equipment cubicle. From a universal AC mains supply the ZVS3-PSU provides +5VDC and –5VDC. The ZVS-PSU-OD is available as an option in place of the ZVS-PSU-O. This is a dual redundant equivalent and has power loss alarm reporting capabilities.

Being a modular system any sized video matrix up to 4096 inputs by 2048 outputs can be constructed from the modules above. The smallest size or entry level for a ZoneVu Series 3 is 128 video inputs by 16 video outputs.

Designing large scale video matrix systems can be a daunting task for systems engineers, because the designer has to take into account for space required, cable management, crosstalk, insertion loss, excessive heat and other important issues.

Getting any of these issues wrong will affect the resulting video quality. When designing large matrix systems with several hundred or thousand video signals just the sheer physical size of the matrix and managing the video cables is a real problem.

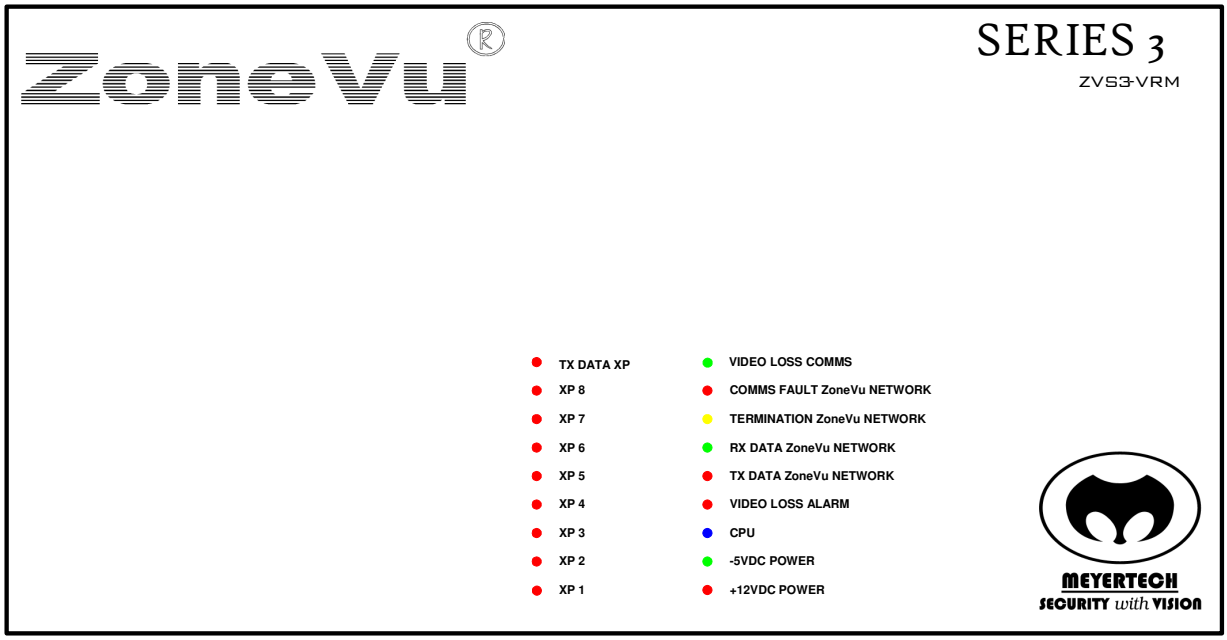
The ZoneVu Series 3 reduces these issues through its compact design, high level of integration and exceptional video performance. It is also 100% non-blocking, which means any video input can be switched to any output or any number of outputs including all of them simultaneously.

A key feature of the Series 3 is its expansion capabilities. Most video matrix systems expand by connecting the outputs of one block to the inputs of the next block. This method of expansion increases the degradation of the video signal as well as using a whole block of video inputs! resulting in an increase in physical size. ZoneVu Series 3 with its unique design suffers from none of these problems, ensuring your matrix solution is compact and free from signal degradation.

The ZVS3-VRM

The design of the ZoneVu Series 3 Video Matrix System uses the latest video crosspoint technology available to offer superior performance over conventional video matrix designs. The ZVS3-VRM has the capacity to route up to 128 video inputs to 128 video outputs. Each ZVS3-VRM can optionally be fitted with a video loss module to actively monitor each video input.

Diagram showing the front panel of a ZVS3-VRM



The ZVS3-VRM front panel incorporates an eighteen module status LEDs. The function and the operation of each LED are described in the table on the following page.

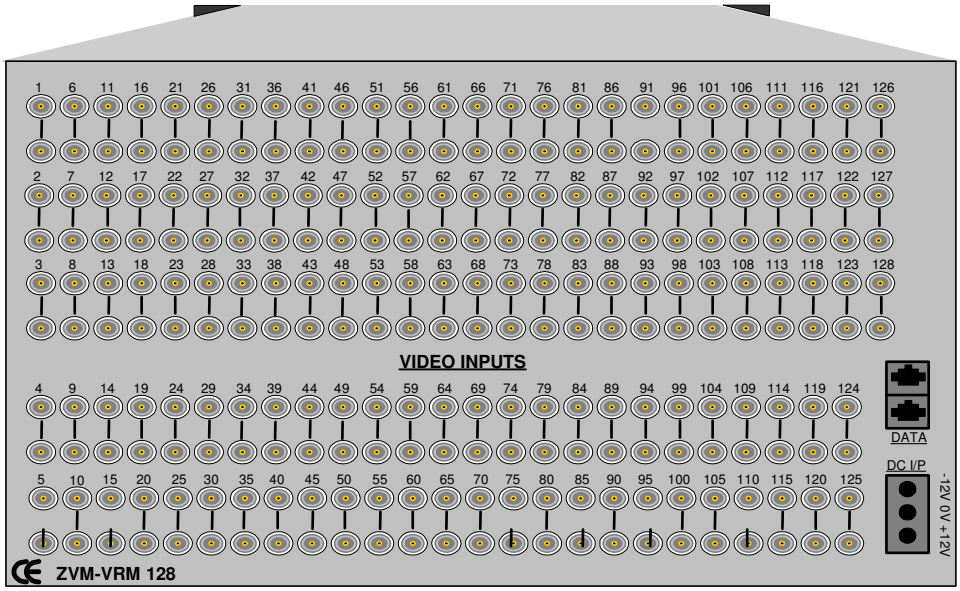
The ZVS3-VRM is the '*building block'* of the ZoneVu Series 3 matrix system. A video matrix of any size can be constructed from multiple ZVS3-VRMs up to the maximum Series 3 system size of 4,096 inputs by 2,048 outputs. For further information describing how large-scale video matrix systems are constructed refer to the section titled '*Expanding the Series 3 Video Matrix'*.

The ZVS3-VRM is supplied in a 19-inch sub-rack and is 5U in height. Airflow within the ZVS3-VRM is maintained using a high fan mounted to the front panel.

Table detailing the function of the ZVS3-VRM front panel LEDs

STATUS LED	FUNCTION	STATUS LED	FUNCTION
TX DATA XP Colour - Red	*Normal status off. Flashes when data is transmitted to the crosspoint routing cassette*	VIDEO LOSS COMMS Colour - Green	*Normal status flashing once per 1.5 second. Permanently on or off indicates communication wit the Video loss module has been lost.*
XP 8 Colour - Red	*Normal status on. XP flashes when the x-point switch has been confirmed.*	COMMS FAULT ZoneVu NETWORK Colour - Red	*Normal status off. Permanently on or flashing indicates communication with the ZoneVu network has been lost*
XP 7 Colour - Red	*Normal status on. XP flashes when the x-point switch has been confirmed.*	TERMINATION ZoneVu NETWORK Colour - Yellow	*Normal status can be either on or off depending on configuration.*
XP 6 Colour - Red	*Normal status on. XP flashes when the x-point switch has been confirmed.*	RX DATA ZoneVu NETWORK Colour - Green	*Normal status off. Flashes in sympathy with data being received.*
XP 5 Colour - Red	*Normal status on. XP flashes when the x-point switch has been confirmed.*	TX DATA ZoneVu NETWORK Colour - Red	*Normal status off. Flashes in sympathy with data being transmitted.*
XP 4 Colour - Red	*Normal status on. XP flashes when the x-point switch has been confirmed.*	VIDEO LOSS ALARM Colour – Red	*Normal status off. On indicates a video input loss alarm in the module.*
XP 3 Colour - Red	*Normal status on. XP flashes when the x-point switch has been confirmed.*	CPU Colour - Blue	*Normal status flashing once per second. Permanently on or off indicates the CPU has malfunctioned.*
XP 2 Colour - Red	*Normal status on. XP flashes when the x-point switch has been confirmed.*	-5V DC Colour - Green	*Normal status on. Off indicates the failure of the –12V DC power supply.*
XP 1 Colour - Red	*Normal status on. XP flashes when the x-point switch has been confirmed.*	+12V DC Colour - Red	*Normal status on. Off indicates the failure of the +12V DC power supply.*

Diagram showing the back panel of a ZVS3-VRM



The rear panel of the ZVS3-VRM contains connections for the input of video signals; the looping through of video signals to other equipment; data connectors and a power supply connector.

Two hundred and fifty-six **Video Input Connectors** arranged in pairs are located on the backpanel. Each pair of connectors present a Hi Z (high impedance) to the video input signal allowing it to be looped through to other equipment. When the ZVS3-VRM is the last piece of equipment being connected, from a video input perspective, a 75R terminator should be used to terminate each video input. All BNC connectors are the standard size type.

Two **RJ45** connectors are located on the right of the backpanel. The RJ45 connectors are connected in parallel to allow ZVS3-VRMs to be daisy-chained together using 'patch-leads'. The RJ45 connectors carry duplex data through which the ZoneVu Series 3 video matrix system is controlled. The connector also incorporates a RS232 serial port for configuration of the system by Mpower, Meyertech's Windows based ZoneVu configuration tool. System configuration can also be achieved through the ZSC-1000plus.

A single high current **Power Connector**, three terminals, is used to carry power to the ZVS3-VRM. The ZVS3-VRM requires a +12V and –5V DC supply. A ZVS-PSU-R module generates these supplies separately.

Removing the front panel of the ZVS3-VRM reveals its inner construction and in particular the VR Cassette. Below we see a diagram of the ZVS3-VRM with the front panel removed.

Diagram showing the inside of a ZVS3-VRM

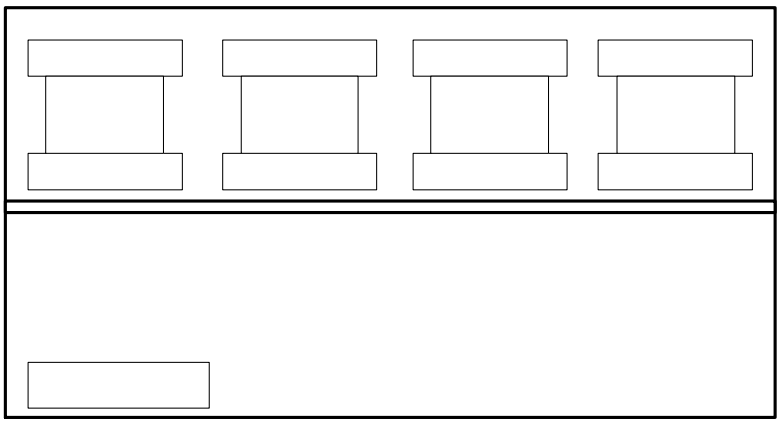


Diagram showing the VR Cassette

VR Cassette (Video Routing Cassette) shown right, connects to the Motherboard via a 25-way lead which carries power and data. The motherboard also incorporates a 20-way header and lead providing power and control signals for the front panel LED PCB.

The VR Cassette, which is removable houses the video routing cards which perform the video crosspoint switching function.

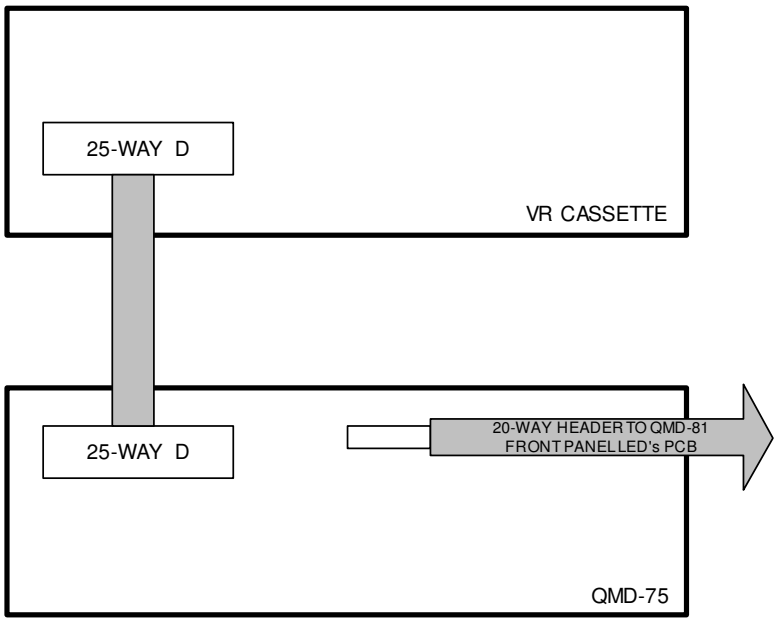
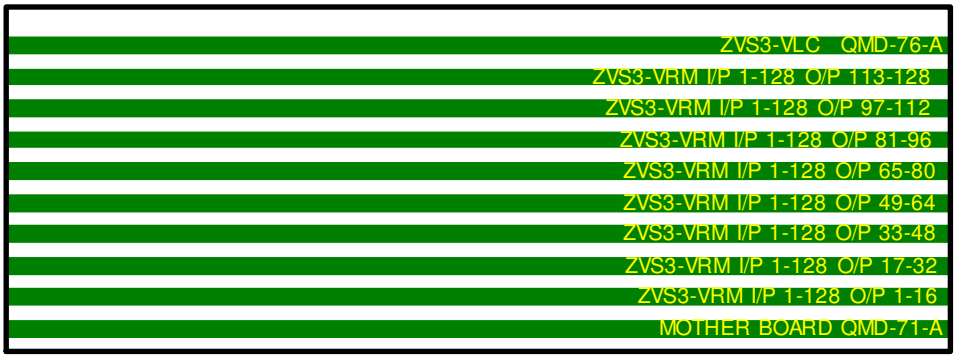


Diagram showing the front view of a VR Cassette in detail


ZVS3-VLC QMD-76-A
ZVS3-VRM I/P 1-128 O/P 113-128
ZVS3-VRM I/P 1-128 O/P 97-112
ZVS3-VRM I/P 1-128 O/P 81-96
ZVS3-VRM I/P 1-128 O/P 65-80
ZVS3-VRM I/P 1-128 O/P 49-64
ZVS3-VRM I/P 1-128 O/P 33-48
ZVS3-VRM I/P 1-128 O/P 17-32
ZVS3-VRM I/P 1-128 O/P 1-16
MOTHER BOARD QMD-71-A

The diagram above shows the front view of the VR Cassette with the video routing cards located inside along with the Motherboard which carries them. The optional ZVS3-VLC-VRM is also shown here. Each VR Cassette can accommodate up to eight video routing cards VRC (QMD-73-A). Each individual VRC route 128 video inputs to 16 video outputs. To make up the 128 x 128 capacity of a ZVS3-VRM we therefore we need 8 cards.

Diagram showing the side view of a VR Cassette in detail

The diagram to the right shows a side view of the VR Cassette. Here we can see the video routing cards to the left and the cards which bridge the outputs of each video routing card together to the right.

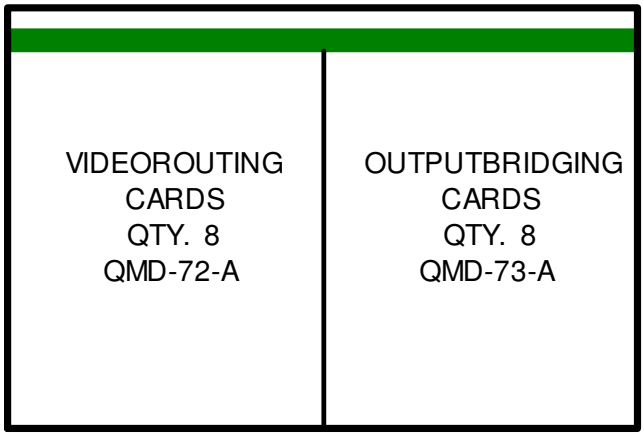


Table detailing ZVS3-VRM component PCBs

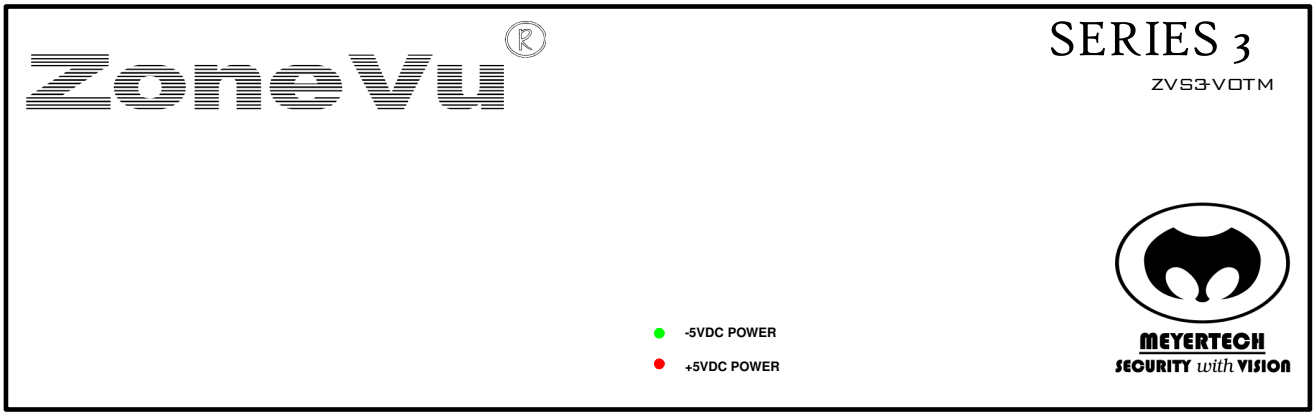
PCB	FUNCTION
QMD-70-A	Video input inner backplane
QMD-71-A	Video input mother board
QMD-72-A	Video routing card
QMD-73-A	Video routing card output router
QMD-74-A	Video routing card output card
QMD-75-A	PSU, CPU and display driver
QMD-76-A	Video input loss monitoring card (optional)
QMD-77-A	ZVS3-VRM Rack jumper 32-channel
QMD-81-A	Video input rack display

ZVS3-VOTM

Each Series 3 video matrix system contains at least one ZVS3-VOTM The role of the **ZVS3-VOTM** in the system is to process and buffer the video output signals from the ZVS3-VRM modules before presentation to the outside world e.g. connection to a video monitor.

The diagram below shows the front panel of the ZVS3-VOTM. Two module status LEDs indicate the presence of power to the module.

Diagram showing the front panel of a ZVS3-VOTM



The ZVS3-VOTM can accommodate 128 video inputs and outputs. Thirty-two ZVS3-VOA-VOM boards, each containing four channels, to make up the 128 channel capacity, plug into a Motherboard which is powered from a +5V and –5V DC supply. On board calibration of the video output level is provided for should it be needed.

The four channel ZVS3-VOA-VOM cards amplify the ZVS3-VRM output signals to provide a 1 volt video output when terminated into a standard 75 ohm load. No data connections are required to the ZVS3-VOTM, as it does not switch any signals.

The video outputs of the ZVS3-VRM are connected to the ZVS3-VOTM via ZVS3-RJ-VOM rack jumper cards and are routed internally at the front of the rack. Each ZVS3-RJ-VOM is a multi-layer PCB carrying 32 channels of video. The ZVS3-VOTM is housed in a 3U 19-inch enclosure. The video outputs are presented to the outside world on the rear of the panel using standard sized BNC connectors. The power input connector is also located on the rear panel of the ZVS3-VOTM.

The ZVS3-VOTM requires no configuration.

The diagram below shows the Motherboard, which is located inside a ZVS3-VOTM. The Motherboard is mounted horizontally in the rack with the ZVS3-VOA-VOM four channel amplifier cards plugging into the Motherboard vertically. The first 'slot' processes video outputs one to four. Expansion of the module proceeds left to the thirty-second slot, which processes outputs 125 to 128.

Diagram showing the ZVS3-VOTM Motherboard

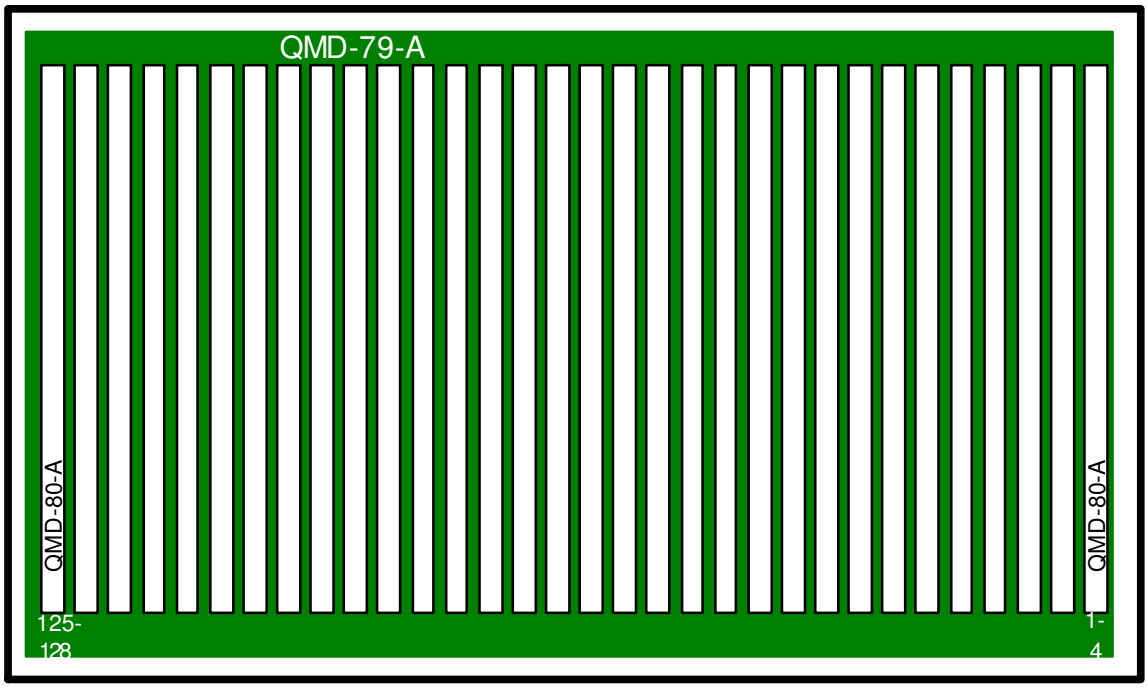


Table detailing ZVS3-VOTM component PCBs

PCB	FUNCTION
QMD-78-A	Video output rack inner backplane
QMD-79-A	Video output rack mother board
QMD-80-A	Four channel video output buffer amplifier
QMD-83-A	ZVS3-VOTM Rack jumper 32-channel
QMD-84-A	Video output rack PSU filter

The ZVS3-VOTM with OSD

The Series 3 Matrix has the option of including an OSD (on-screen display) module. In this case the ZVS3-VOTM module will insert caption and information onto the video signal.

Each ZVS3-VOTM module supports the following captions:

- 4096 camera captions of 28 characters
- 128 monitors captions of 28 characters
- Time and Date

For each caption the appearance can be controlled:

- Text justification
- Line number
- Enabled / disabled
- Flashing

Additionally each monitor output can be individually controlled to display the text either translucent or opaque.

The ZVS3-VOTM uses ZVS3-OSD-VTM cards in place of the ZVS3-VOA-VOM cards.

The ZVS3-VOTM does not include video loss functionality and hence does not switch to internal sync when the video signal is too weak or not present. When fitted the video loss function is performed by the ZVS3-VRMs.

Default caption

To assist in the configuration and setup of the series 3, the OSD module supports the configuration of default captions for both the monitor and camera.

The default caption is used by the module whenever a specific caption has not been configured. The module takes the default caption and appends either the monitor or camera number onto the end of the caption text.

e.g.
Default camera text set to “Cam”
Module automatically displays:

“Cam1” on camera 1’s video
“Cam104” on camera 104’s video

As well as the caption text, the default setting allows a default appearance to be configured.

Time and Date

The ZVS3-VOTM module will display the time and date on any / all monitors.

The format of the time / date is configurable between the following:

HH:MM:SS	e.g. 12:30:01
HH:MM	e.g. 12:30
DD/MM/YY	e.g. 01/07/03
DD/MM/YYYY	e.g. 01/07/2003

Power up

All the camera captions are automatically restored to their last settings on power up.

Third Party Control Of OSD

Using mPower, it is possible to disable the OSD management performed by the Series 3 so that a third party can perform this role. A few additional features are available to facilitate third party caption control.

Dynamic monitor captions:
A 56 character caption that can be applied to any monitor and optionally perform formatting operations to all of the monitor setup. Formatting options available are:

- Monitor text justification and line number
- Time justification and line number
- Date justification and line number

For each caption:

- Flashing text on and off
- Display enabled / disabled
- Transparent or black background to the caption

Applied globally to all captions on a monitor:

- Translucent or opaque
- Double height or normal

Applied to all monitors:

- Time format
- Date format

Note that the caption is still 28 characters per line but the text is split over two lines.

Dynamic camera captions:
A 28 character caption that can be applied to any monitor. The position and format of the caption can be controlled.

Internal Sync:
Can switch any monitor to internal sync (a blank screen). It will remain in internal sync until a switch is performed or the power is cycled. This can be useful for displaying a caption when no video is present.

Standard ZVS-PSU-x

The **ZVS3-PSU-R and ZVS2-PSU-O** power supply modules are common modules used throughout the system to provide DC power to the ZVS3-VRM and ZVS3-VOTM respectfully. The 1U 19-inch module has been designed to fit into a 19-inch equipment cubicle.

Drawing showing the front panel of a ZVS-PSU-R

From a universal AC mains supply, the ZVS3-PSU-R provides +12VDC and –5VDC. The ZVSPSU-O provides +5VDC and – 5VDC. The ZVS3-PSU modules themselves are switched mode type, which are significantly more efficient than linear PSUs. The benefits derived from employing a switched mode supply are threefold

1. Greater efficiency means reduced size.
2. Greater efficiency means reduced heat generation.
3. They are 'Greener' than linear supplies.

Diagram showing the rear panel of a ZVS-PSU with DC Power connector detail

Table detailing the PSU connector pin out (viewed at rear of ZVS-PSU-R. Pin 1 is left most)

PIN NUMBER	FUNCTION
1	-5V DC
2	OV DC
3	+12V DC

Table detailing the PSU connector pin out (viewed at rear of ZVS-PSU-O. Pin 1 is left most)

PIN NUMBER	FUNCTION
1	-5V DC
2	OV DC
3	+5V DC

Dual Redundant ZVS-PSU-xD

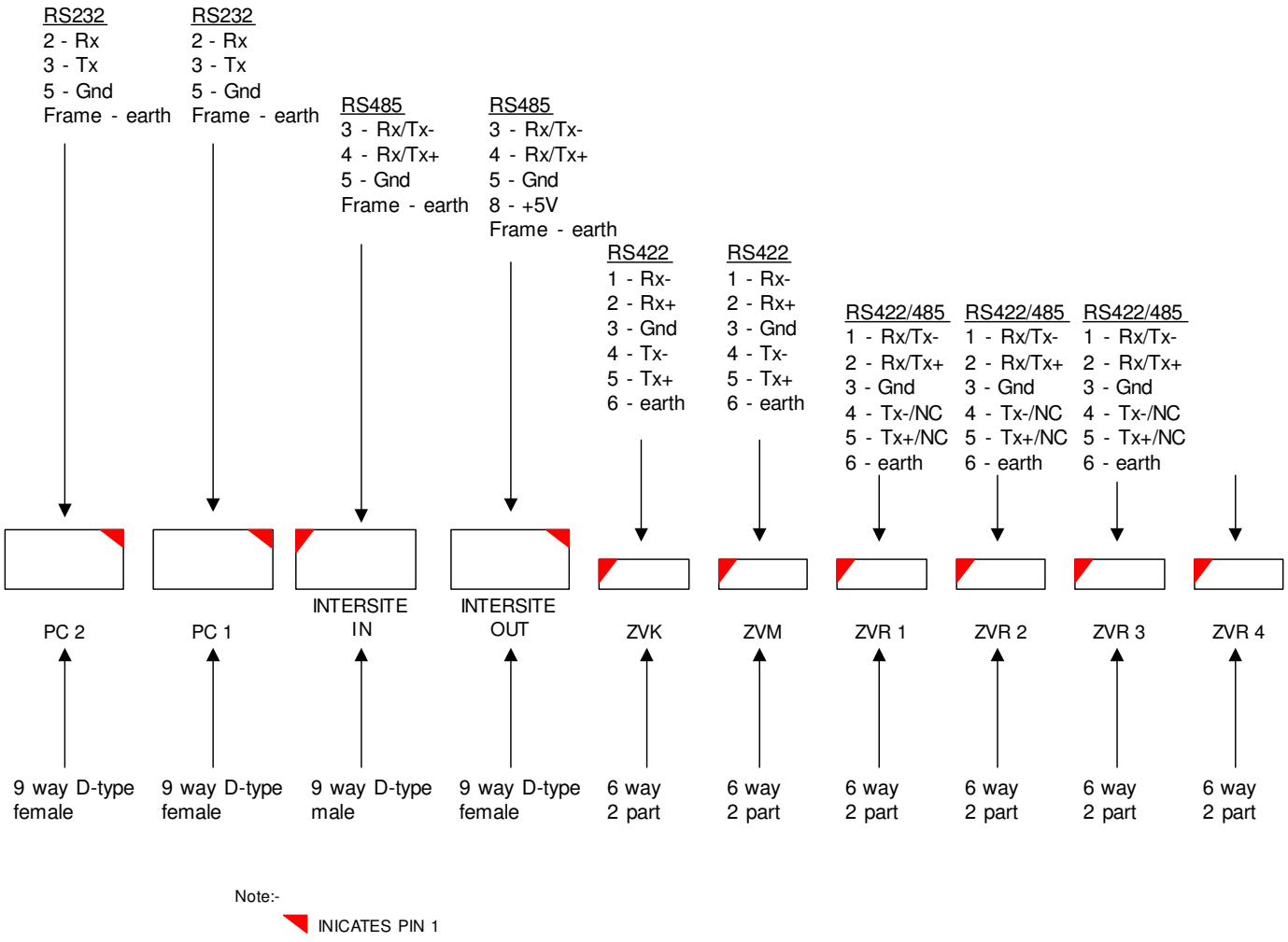
A dual redundant power supply with power fail alarms is also available. Please refer to the ZVSPSU-xD datasheet.

The Role of the ZSC-1000 Site Controller

Each ZoneVu Series 3 video matrix system must incorporate a **ZSC-1000plus** which will act as a matrix manager. The **ZSC-1000plus** is responsible for controlling all data storage and communication aspects of the Series 3 video matrix system. Video matrix configuration data is stored within the Series 3 in non-volatile RAM, which can be uploaded and downloaded using Mpower and a PC.

The **ZSC-1000plus** connects to the RJ45 port of the first ZVS3-VRM in the system from its ZVM port located on the rear panel. RJ45 patch leads are then used to daisy-chain the data connection to other ZVS3-VRMs in the system.

The diagram below shows the connection details for the **ZSC-1000plus**.



Note:-

INICATES PIN 1

SERIES 3

Installation

Your ZoneVu Series 3 video matrix has been supplied as either a complete video matrix system (as part of our ***System Build Solutions***) in a 19-inch equipment cubicle (or cubicles), pre-cabled, pre- configured, fitted with termination plugs and bridging cables depending on the size of the video matrix. Or as individual modules, ZVS3-VRM, ZVS3-VOTM, ZVS3-PSU-R, ZVS3-PSU-O and various system components required to connect the matrix together and, if ordered, ZVS3 options.

System Build Solution

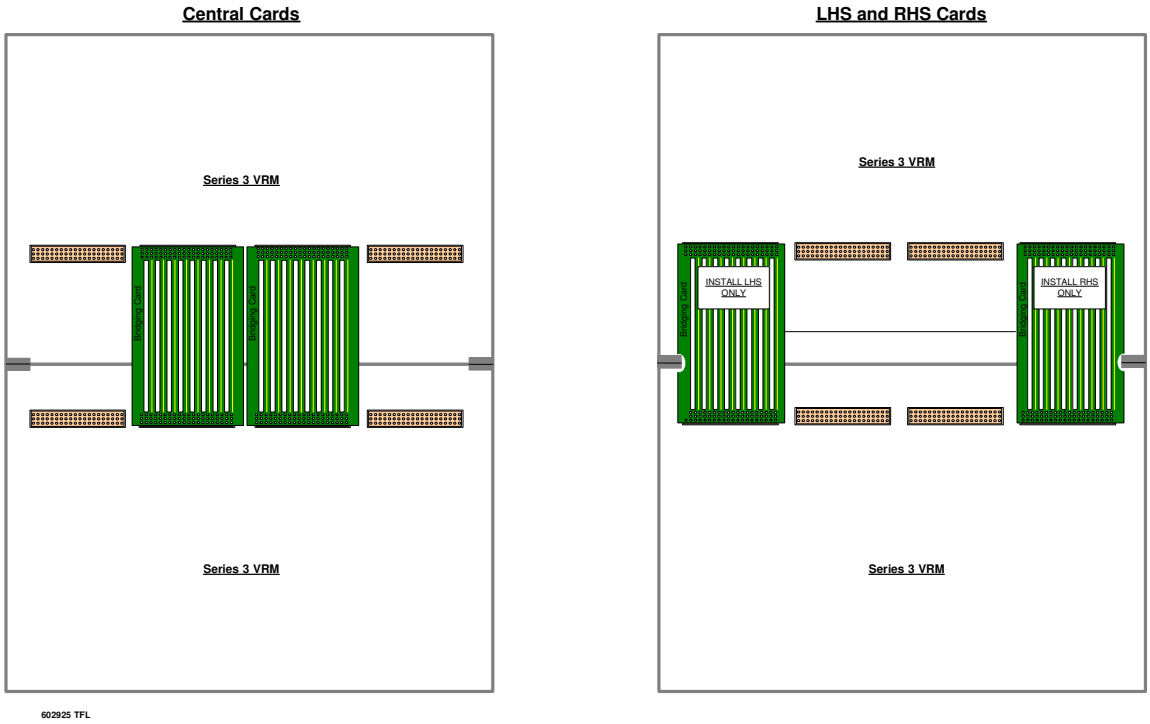
If supplied as a ***system build solution***, the Series 3 video matrix requires minimal installation to make it operational. Follow the steps below to complete the installation process.

1. Locate the equipment cubicles in a suitable environment in accordance with the Safety Precautions on page 3.
2. Your ZVS3-VRMs and ZVS3-VOTMs will arrive with their bridging cards removed for transportation reasons. Below are notes for their installation.

    - Please note that there are three types of bridging cards according to their placement within the modules.

        1. **Install LHS Only** – This means that these cards need to be installed on the Left Hand Side of the modules only, the cards will be clearly marked with 'Install LHS Only'.
        2. **Install RHS Only** – This means that these cards need to be installed on the Right Hand Side of the modules only, the cards will be clearly marked with 'Install RHS Only'.
        3. **Central** – These cards can be placed in either of the two central card positions.

    - Below is a diagram showing the three types of cards and the positions they are to be installed. The cards have to be installed in these positions in order to fit into the modules. This is due to the framework of the modules.



Please note that the same applies when connecting a ZVS3-VRM to a ZVS3-VOTM.

3. Connect your video sources to the ZVS3-VRM modules.

4. If your system is large, ensure the RJ45 patch leads are connected between cubicles. These leads connect the data bus from one Series 3 module to another. Ensure the ZSC-1000plus (ZVM Port) is connected to the first ZVS3-VRM RJ45 port.
5. Ensure the power leads are connected from the ZVS3-PSU-R and ZVS3-PSU-O (or RD and OD if you have dual redundant power supplies) modules and that they in turn are connected to a suitable mains supply.

   Note : The ZVS3-PSU-O (or OD) should be connected to the ZVS3-VOTM only using the supplied cable. The length & type of cable has been selected to ensure sufficient current capactiy.
6. If you are using ZoneVu ZVK Series keyboards to control the Series 3 matrix they should be connected the ZSC-1000plus ZVK port. Consult the ZSC-1000plus manual and respective ZVK manual for further information.
7. If you are controlling the Series 3 system from a FUSION workstation you will require a ZSC-250 ZoneVu gateway module which interfaces three FUSION workstations to a ZoneVu system. Please refer to the ZSC-250 manual on how to connect it to the ZSC-1000plus Site Controller.
8. If you are controlling the Series 3 system via third party equipment, again you will need a ZSC-250 ZoneVu gateway module to achieve this. Please refer to the ZSC-250 manual on how to connect it to the ZSC-1000plus Site Controller.

Installation is now completed. Power-up the system in accordance with the following section, and check the system is operational. If the system does not operate correctly and you are confident the above instructions and you have installed the system in accordance with the product manuals, consult technical support.

Table detailing the RJ45 socket pin out (viewed at rear of ZVS3-VRM. Pin 1 is right most)

PIN NUMBER	FUNCTION
1	RS232 Rx
2	RS232 Tx
3	Mpower
4	RS422 Rx-
5	RS422 Rx+
6	0V DC
7	RS422 Tx+
8	RS422 Tx-

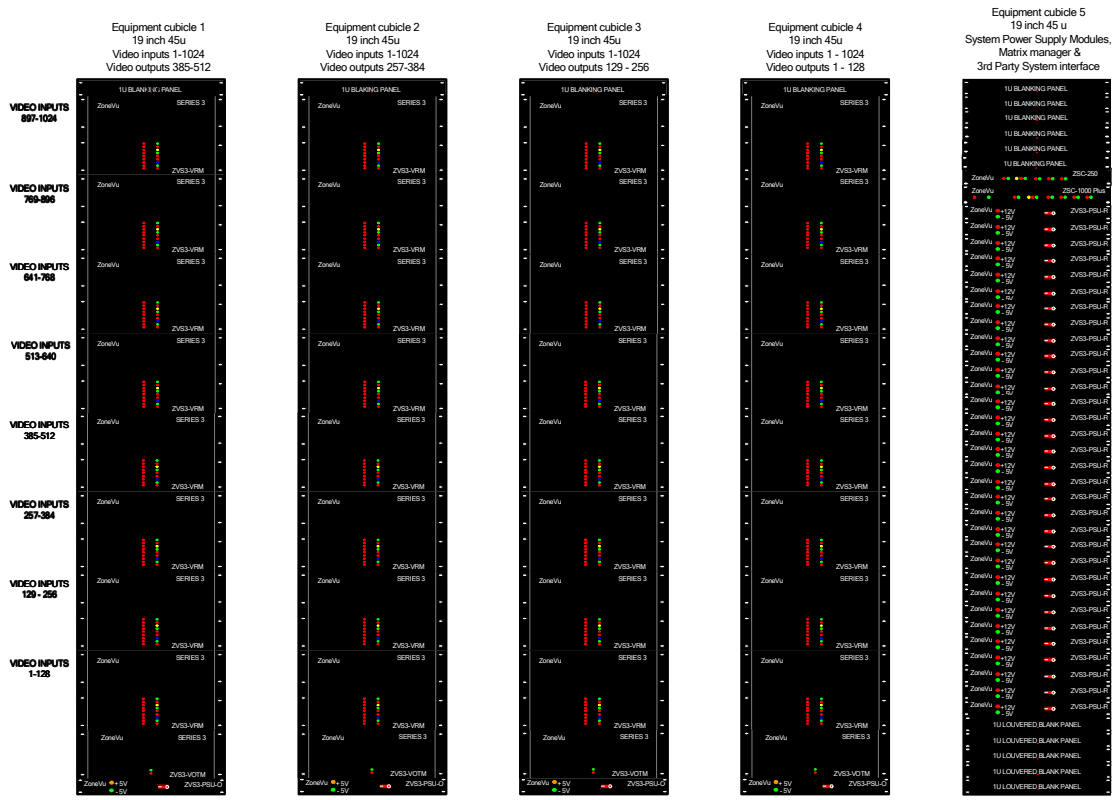
Installing Individual Modules

The first step is to unpack all the matrix modules and accessories. The ZoneVu Series 3 video matrix system is shipped in its component parts and will need assembling prior to operation. You should have the following components.

1. One or more ZVS3-VRM modules supplied in 5U by 19-inch enclosures.
2. One or more ZVS3-VOTM modules supplied in 3U 19-inch enclosures.
3. One or more ZVS3-PSU-R(D) modules supplied in 1U 19-inch enclosures.
4. One or more ZVS3-PSU-O(D) modules supplied in 1U 19-inch enclosures.
5. A ZSC-1000plus Site Controller module. If the Series 3 matrix is being fitted into an existing system the ZSC-1000plus may already be present.
6. A ZVS3-VRM to ZSC-1000 RJ45 patch lead.
7. ZVS3-VRM RJ45 patch leads if they have been ordered as an option.
8. ZVS3-PSU-R DC power connectors. One per module.
9. ZVS3-VRM DC power connectors. One per module.
10. ZVS3-PSU-O to ZVS3-VOTM pre-made DC power lead. One per module.
11. ZVS3-T75-VRM 75 termination plugs if they have been ordered as an option.
12. ZVS3-BC1-VRM video input bridging cables for the ZVS3-VRM modules if they have been ordered as an option.
13. One or more ZVS3-RJ-VRM video routing rack module rack jumper cards, depending on how many outputs your video matrix has.
14. One or more ZVS3-RJ-VOM video routing rack module rack jumper cards, depending on how many outputs your video matrix has.

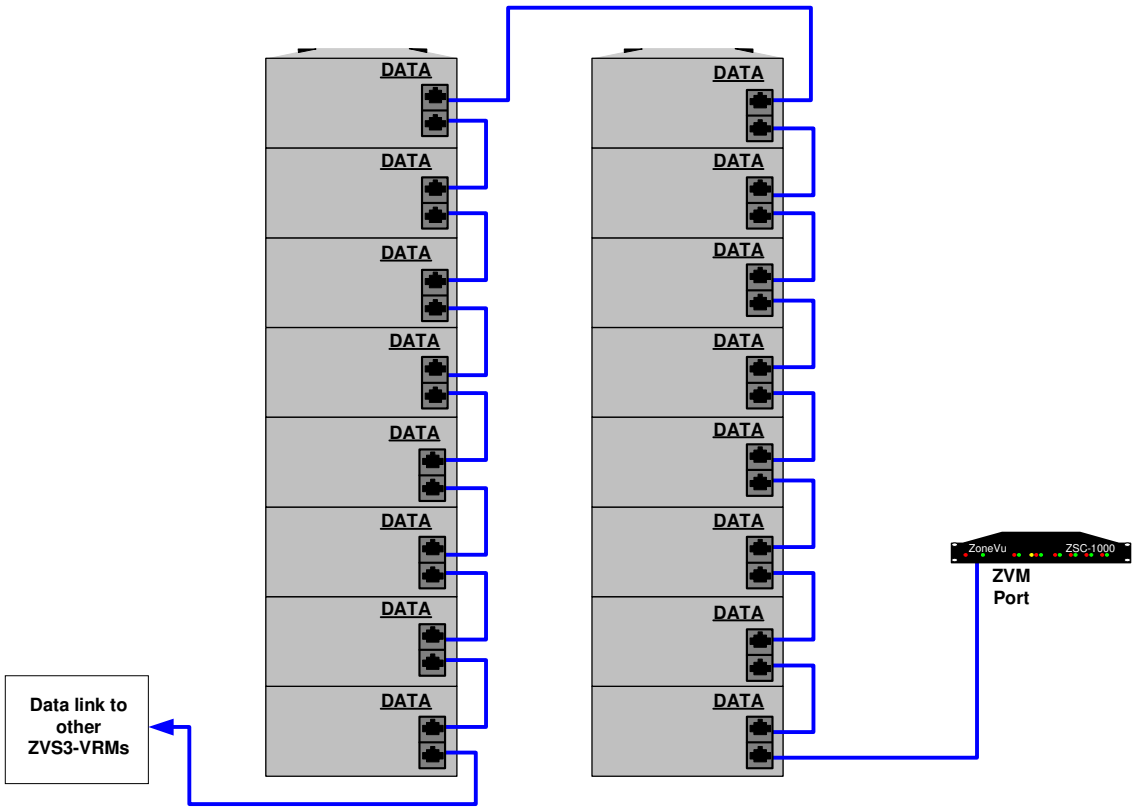
The next step is to fit the modules into a suitable 19-inch equipment cubicle. The modules should be fitted from the bottom up leaving space for expansion. A typical equipment cubicle layout is shown below using three 19-inch 45U cubicles to accommodate a ZVS3-1024256.

Diagram showing typical cubicle layout for a large ZoneVu Series 3 video matrix system



1. Fit modules into equipment cubicles. Fit the ZVS3-VRM modules, the ZVS3-VOTM (depending on screen display option) modules, ZVS-PSU-x(D) modules, ZSC-1000 and if your system has one a ZSC-250 or ZSC-250-IP module.
2. Remove the front covers of the ZVS3-VRM modules and fit the ZVS3-RJ-VRM rack jumper cards between each ZVS3-VRM.
3. Remove the front covers of the ZVS3-VOTM and fit the ZVS3-RJ-VOM rack jumper cards between the last ZVS3-VRM and the ZVS3-VOTM.
4. Connect the RJ45 patch lead between the ZSC-1000plus (see the pin-out table above) and the first ZVS3-VRM. Use the top connector as Mpower will use the bottom for configuration. We are going to daisy-chain the ZVS3-VRMs with the remaining RJ45 patch leads. The final ZVS3-VRM should be terminated (use Mpower to enable the termination resistor)

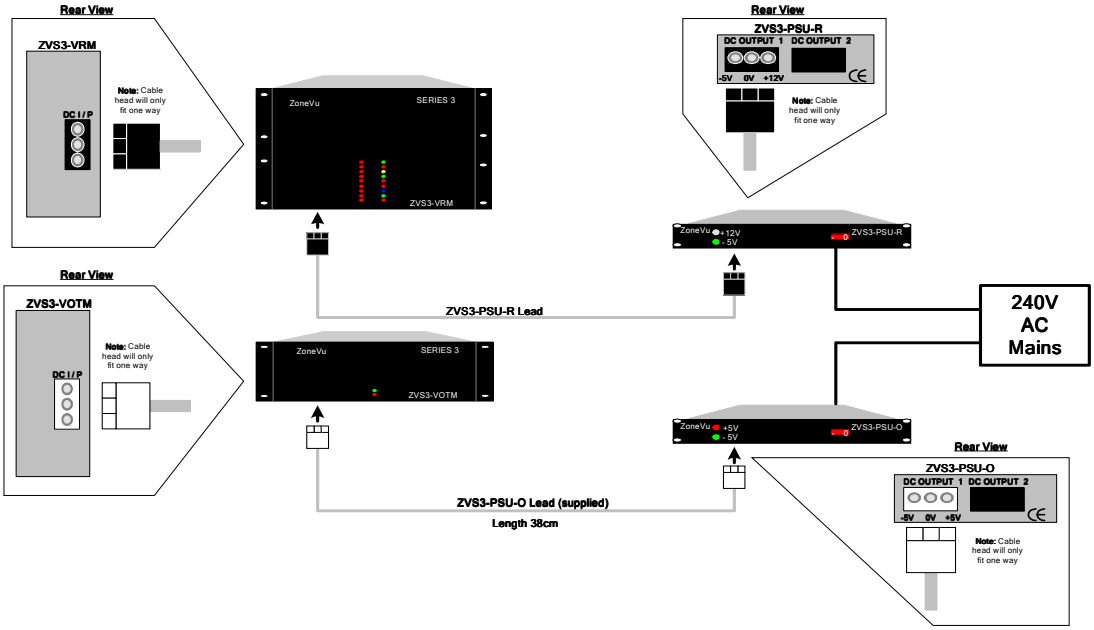
See Diagram below:



5. If you have a ZSC-250 in your system connect the ZSC-250 ZoneVu port to the keyboard port of the ZSC-1000plus.
6. Connect your RS232 controlling device, EG PC, to one of the RS232 ports on the ZSC-250.
7. Each ZVS3-VRM has two RJ45 sockets connected in parallel so we can perform daisy-chain connections from one ZVS3-VRM to the next.
8. Connect power to each ZVS3-VRM from the ZVS-PSU-R(D) modules. Remember that one ZVS-PSU-R will supply two ZVS3-VRMs.
9. Connect power to each ZVS3-VOTM from the ZVS-PSU-O(D) modules. Remember that one ZVS-PSU-O will supply one ZVS3-VOTM.

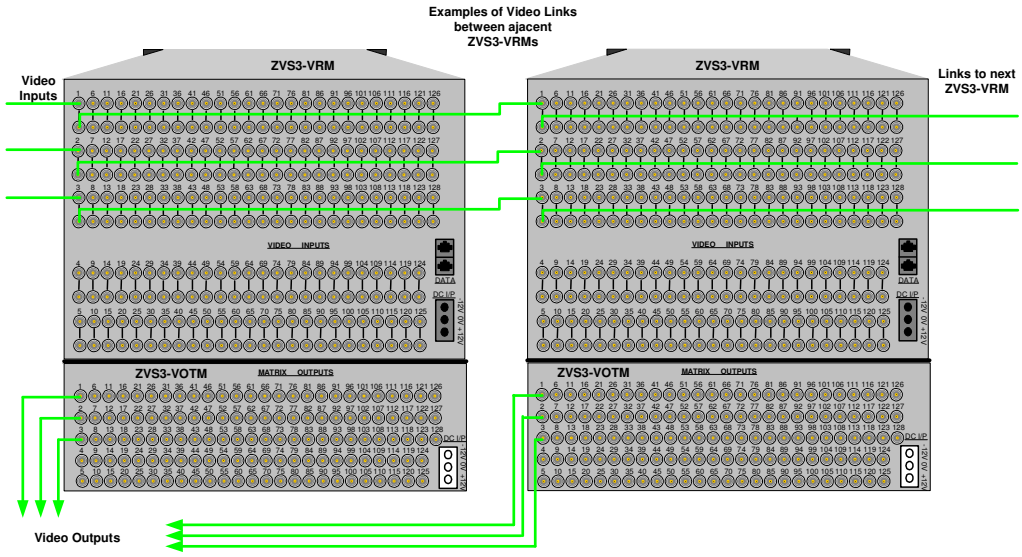
Note : Please use the pre-made DC power lead(s) supplied. This requires that the ZVS-PSU-O(D) be fitted directly below the ZVS3-VOTM.

See diagram on next page:



10. Fit video bridging cables from the inputs between the ZVS3-VRM modules of the two bays. This is only a requirement when the number of video outputs exceeds 128. In the example above the number of outputs are 256 so we have to bridge every video input from each ZVS3-VRM in cubicle B to every video input from each ZVS3-VRM in cubicle C. In practice we have found this is best-achieved using miniature coax cable as it is easier to manage.

See diagram below:



If your system does not require the video inputs to be looped through to other equipment in the system you will need to terminate each and every video input using 75R termination plugs. If you don't terminate used and unused inputs the full video performance of the Series 3 matrix system may not be realised. 75R termination plugs for the ZoneVu Series 3 can be purchased as an option. Part code ZVS3-T75-VRM.

11. Connect the outputs of the ZVS3-VOTMs to your monitor inputs, VCRs or DVR system ETC.

12. Finally connect the video source inputs to the ZVS3-VRMs

Power up

As the matrix has no master power switch, switch on is achieved via the individual power switches of the ZVS-PSU-R(D) & ZVS-PSU-O(D) power supplies.

The power up order of most modules is not significant, however if OSD is fitted in the ZVS3-VOTM, this module must be switched on before the ZVS3-VRM (inputs 1 – 128) which is responsible for it's initialisation.
A suggested power-up sequence would be :

1. ZVS3-VOTM (all outputs)
2. ZVS3-VRM (all inputs)
3. ZSC-1000plus

If power to any ZVS3-VOTM is interrupted in isolation from the rest of the matrix, it will be necessary to cycle the power on the ZVS3-VRM modules (inputs 1 – 128 only) to ensure character generation is correctly re-initialised.

Configuration

Configuration of a ZoneVu Series 3 video matrix system is performed entirely using the ZoneVu software configuration tool, Mpower, a Windows based application. Configuration of both the ZVS3-VRM modules and the ZSC-1000plus are required, and also the ZVS3-VTM if fitted.

Mpower is used to configure various parameters of the video matrix system. These parameters are:

1. Video matrix size
2. ZVS3-VRM MAC (Module Access Code)
3. Data termination
4. Baud rate
5. ZVS3-VRM input range
6. ZVS3-VRM output range
7. On screen display
8. Report Video Loss

Following the instructions on the following page, connect your PC to each (in turn) ZVS3-VRM in the system using the RJ45 port.

Configuring the ZVS3-VRM Modules

1. Connect Mpower using the RS232 port of the PC

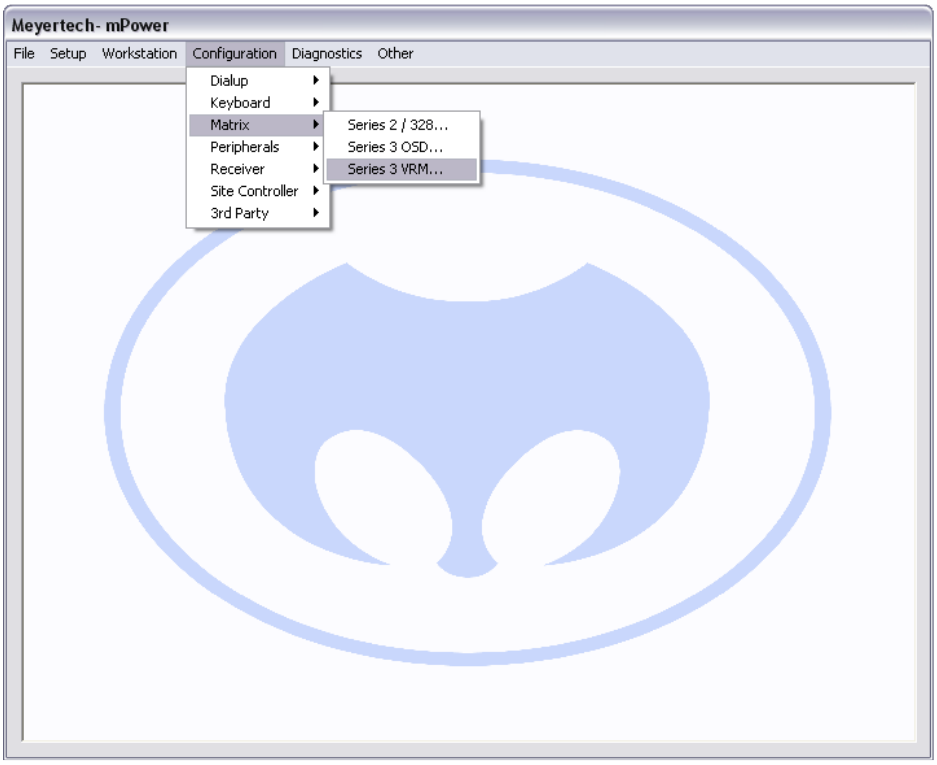
Table detailing the pin out of the lead required to connect the PC to a ZVS3-VRM which uses the RJ45 socket pin out (viewed at rear of ZVS3-VRM. Pin 1 is right most) and an RS232 port

Pin Number	Colour	Usage	Connection to PC. 9-way female D-type.
1	Orange+White	Mpower Rx (RS 232)	Pin 3
2	Orange	Mpower Tx (RS 232)	Pin 2
3	Green+White	Mpower select (Gnd active)	Pin 5

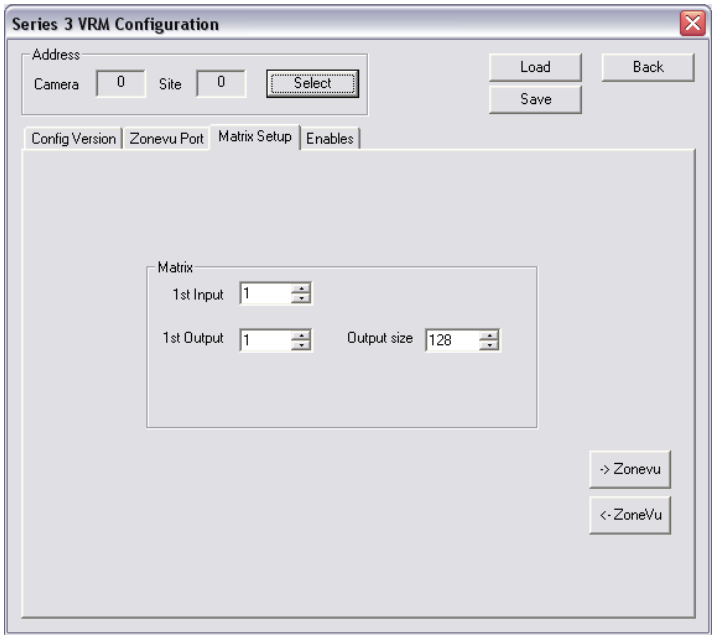
4	Blue	Network Rx- (RS422)	N/C
5	Blue+White	Network Rx+ (RS422)	N/C
6	Green	0V DC	Pin 5
7	Brown+White	Network Tx+ (RS422)	N/C
8	Brown	Network Tx- (RS422)	N/C

Note that the baud rate will always revert to 9600 when mPower is connected.

2. Select 'Configuration -> Matrix -> Series 3 VRM



Matrix Setup



1st Input
Input number that the matrix starts at

Default = 1

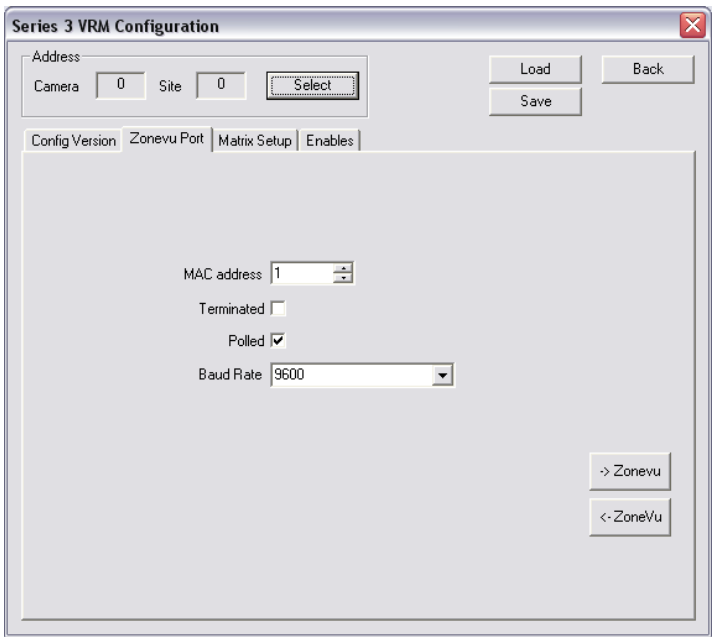
1st Output
Output number that the matrix starts at

Default = 1

Output size
Size of the matrix in terms of outputs

Default = 128

ZoneVu Port Configuration



MAC address
The address to which the unit will respond to polls on this port
Default = 1

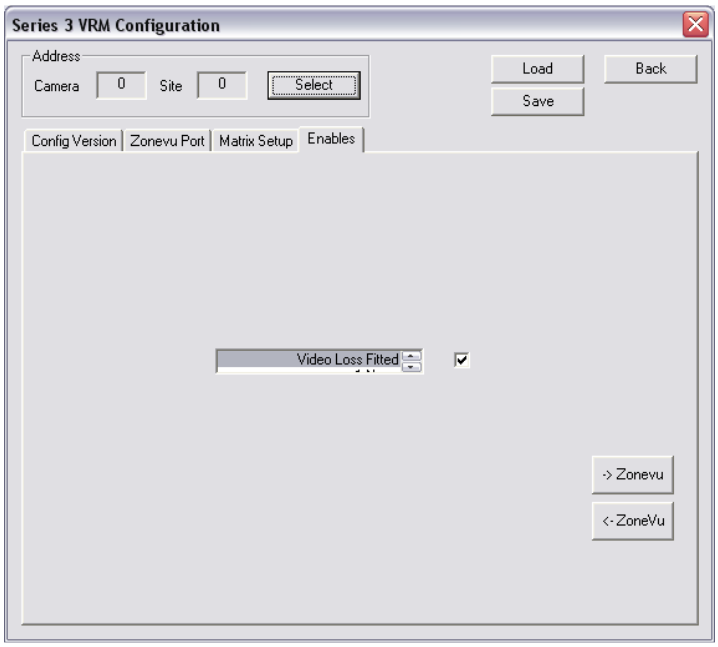
Terminated
The state of the 120R line terminator
Default = Off

Polled
To indicate that the unit should expect to be polled. If On, the unit will wait for a poll before transmitting any information
Default = On

Baud Rate
Defines the baud rate at which the ZVK port communications occurs.
Valid values are 4800, 9600, 19200, 38400
Default = 9600

Enables

This section allows a number of miscellaneous features to be enabled.
Modification of any of these values should be done with care.



Video Loss Fitted
If disabled, the video loss card will not be polled. This should be off if no video loss card is fitted.
Default = On

Configuring the ZSC-1000 Module

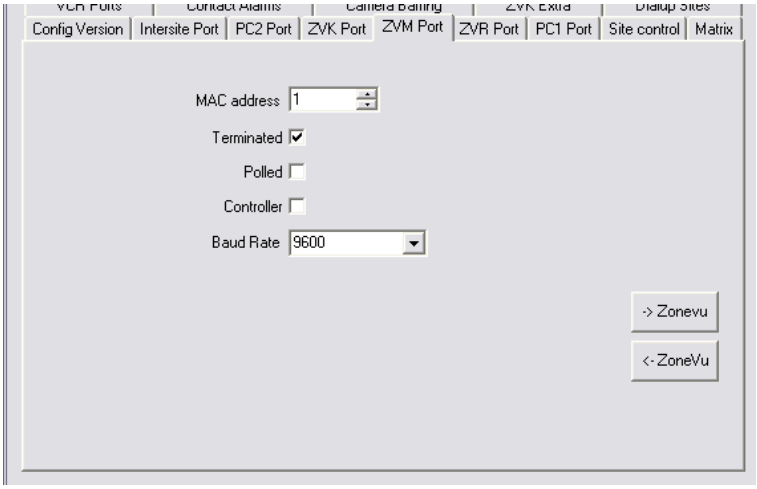
Once the ZVS3-VRMs have been configured we need to configure the ZSC-1000 ZoneVu Series 3 matrix manager.

See the ZSC-1000 user manual for instructions on configuration.

Configuration is performed using Mpower, see the Mpower user manual for details of operation.

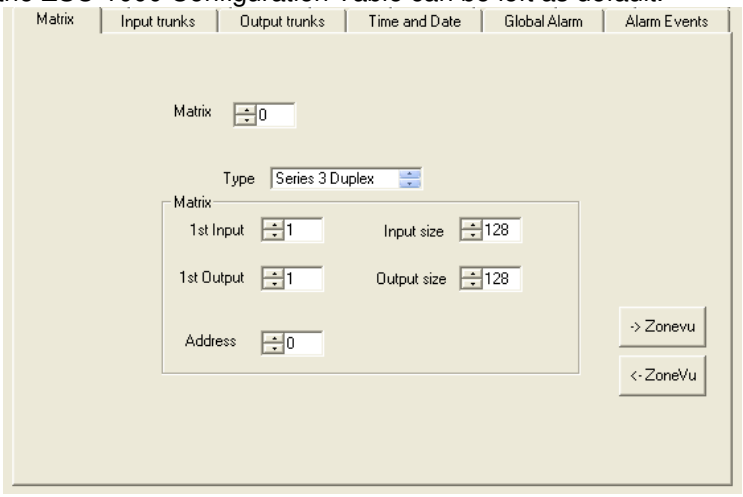
Using Mpower follow the steps below:

1. Connect your PC to the ZSC-1000 using a standard RS232 lead. At the PC connect to your RS232 port EG COM 1. At the ZSC-1000 connect to PC2 port.
2. The baud rate should match the baud rate on the ZoneVu port of the matrix. Configure the other aspects of the ZVM port as shown in below.



3. Next configure the Matrix fields
    a. Select ZVM Series 3 (duplex)
    b. The first matrix input, typically 1
    c. The first matrix output, typically 1
    d. The matrix input size EG 256
    e. The matrix output size EG 128

All other fields in the ZSC-1000 Configuration Table can be left as default.

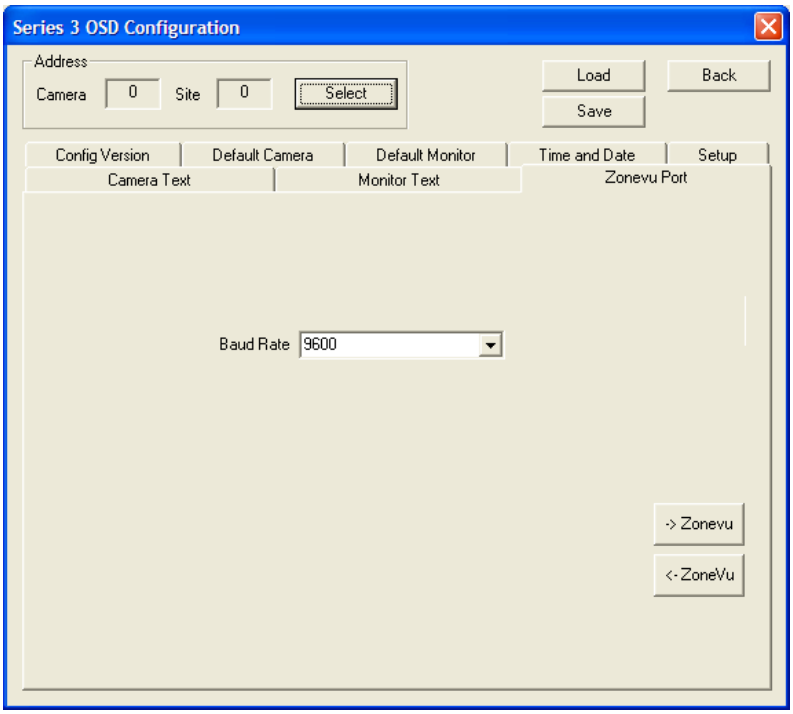


Configuring the ZVS3-VTM Module

The ZVS3-VTM module can be configured the PC2 port of the ZSC-1000 or any of the PC ports on a ZSC-250. Alternatively, it may be configured through the connection to the first ZVS3-VRM module, i.e. the module which accommodates the first 128 inputs. Follow the instructions in the section 'Configuring the ZVS3-VRM Modules', to connect your PC to the ZVS3-VRM using the RJ45 port. Note that the baud rate will always revert to 9600 when mPower is connected directly.

Configuration is performed using Mpower; see the Mpower user manual for details of operation.

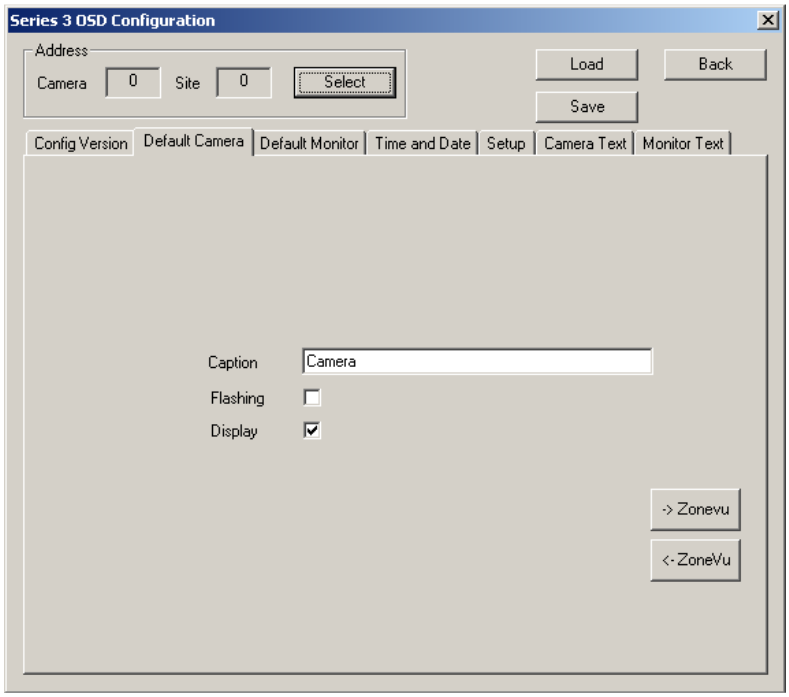
ZoneVu Port Baud Rate



Baud rate
The baud rate that the ZoneVu port is running at. This should match the baud rate of the ZVM port on the ZSC-1000 and the ZoneVu port of the ZVS3-VRM.

Default = 9600

Default Camera



Caption
The default caption, max length is 24 characters (4 characters less than the screen width, to allow for automatic insertion of the camera number)

Default = “Camera “

Leaving a space after the caption puts a space between the caption and the number e.g. a default caption of “Cam “ would display “Cam 1”, a default caption of “Cam” would display “Cam1”

Flashing
A flag to indicate if the caption should be flashing (ticked = flashing on)

Default = Off (unticked)

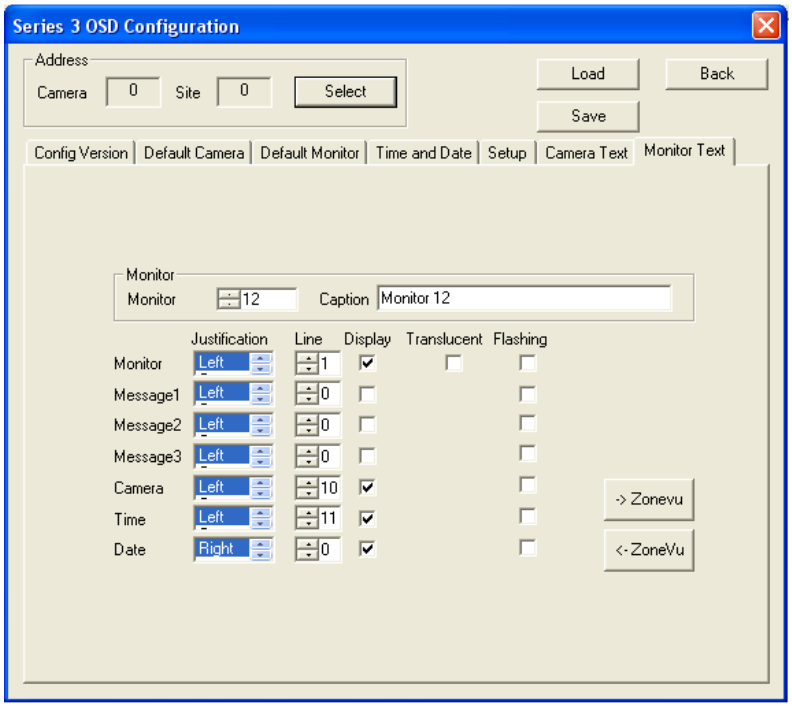
Note: camera captions can also be set to flash using the camera section of the *Default Monitor* or *Monitor Text* screens. Flashing is enabled if **either** of these boxes are ticked.

Display
A flag to indicate if this caption should be displayed (ticked = display on)

Default = On (ticked)

Note: camera captions can also be disabled using the camera section of the *Default Monitor* or *Monitor Text* screens. The caption is disabled if **either** of these boxes are un-ticked.

Default Monitor



Caption
The default caption, max length is 24 characters (4 characters less than the screen width, to allow for automatic insertion of the monitor number)

Default = "Monitor "

Leaving a space after the caption puts a space between the caption and the number e.g. a default caption of "Mon " would display "Mon 1", a default caption of "Mon" would display "Mon1"

Monitor
Justification
Text justification (left, right or centre)

Default = Left

Line
Line number for caption (1 to 16)

Default = 1

Display
Flag to indicate if the caption should be displayed (ticked – display on)

Default = On

Translucent
Text appearance - translucent or opaque. (ticked = translucent on)

Default = Off (opaque)

Flashing
A flag to indicate if the caption should be flashing (ticked = flashing on)

Default = Off (unticked)

Message 1. Message 2, Message 3
Future feature.

Camera, Time, Date
Justification
Text justification (left, right or centre)

Default = Left

Line
Line number for caption (1 to 16)

Default = 1

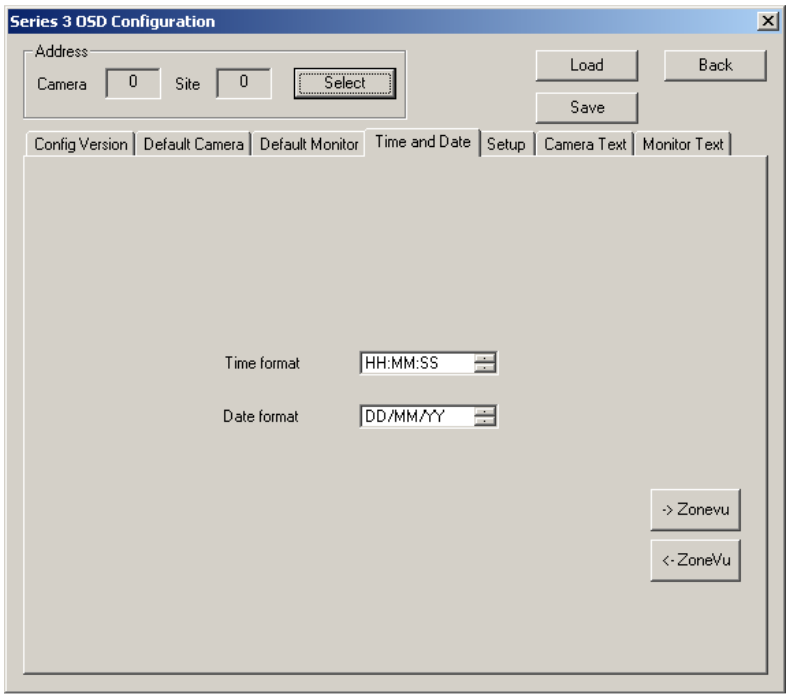
Display
Flag to indicate if the caption should be displayed (ticked – display on)

Default = On

Note : for Camera text this option is also controlled by the *Display* setting on the Default camera or camera text screens.

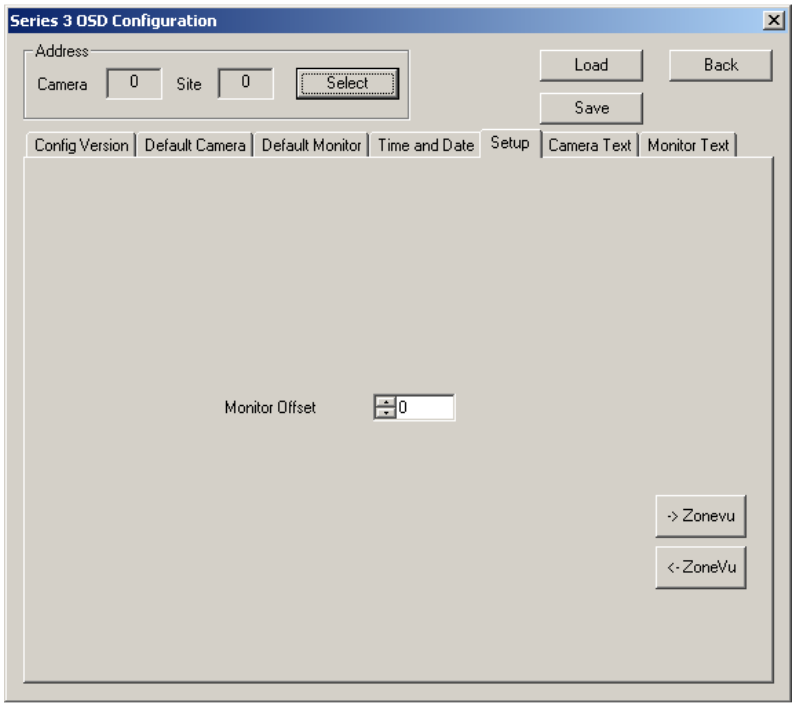
Flashing
A flag to indicate if the caption should be flashing (ticked = flashing on)
Default = Off (unticked)
Note : for Camera text this option is also controlled by the *Flashing* setting on the Default camera or camera text screens.

Time and Date



Time Format
The format that the time is displayed can be set either HH:MM:SS, HH:MM or none (not displayed)
Default = HH:MM:SS
Date Format
The format that the date is displayed can be set either DD/MM/YY, DD/MM/YYYY or none (not displayed)
Default = DD/MM/YY

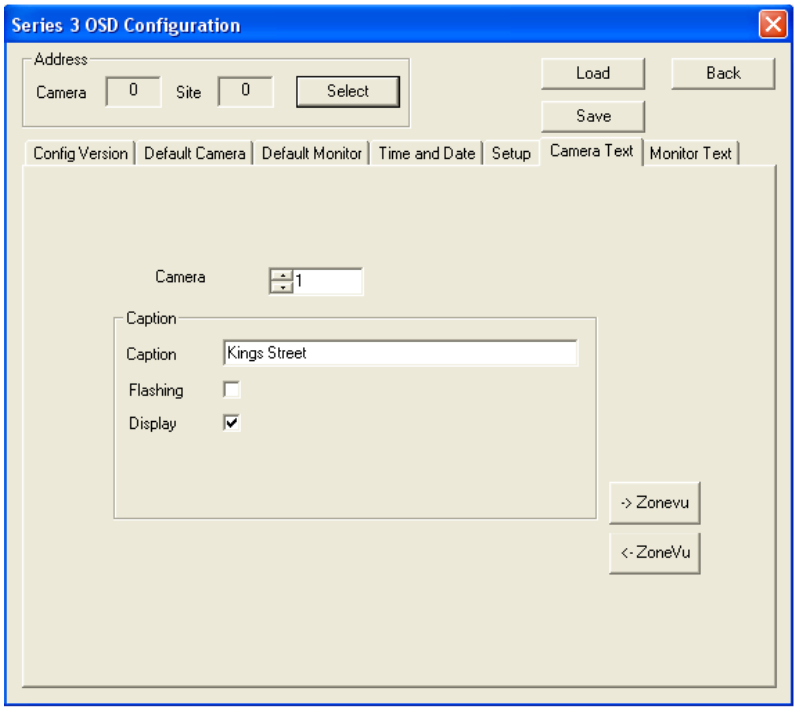
Setup



Monitor Offset
The position of this ZVS3-VTM module within the Series 3 matrix, in terms of monitor number. This setting should not normally be altered. It can only be changed in a direct connection.

Default = 0

Camera Text



Camera
The caption and appearance can be configured for each camera. Unlike other Mpower configuration screens, when the transfer buttons are pressed only the currently selected camera caption information is transferred between Mpower and the ZVS3-VTM

Caption
The caption, max length is 28 characters. Unlike the default caption the camera number is not appended to the text.

Default = “”

Leaving the caption box empty, as in the default, stops the OSD from displaying the individual caption and instead displays the default caption for this camera.

Flashing
A flag to indicate if the caption should be flashing (ticked = flashing on)

Default = Off (unticked)

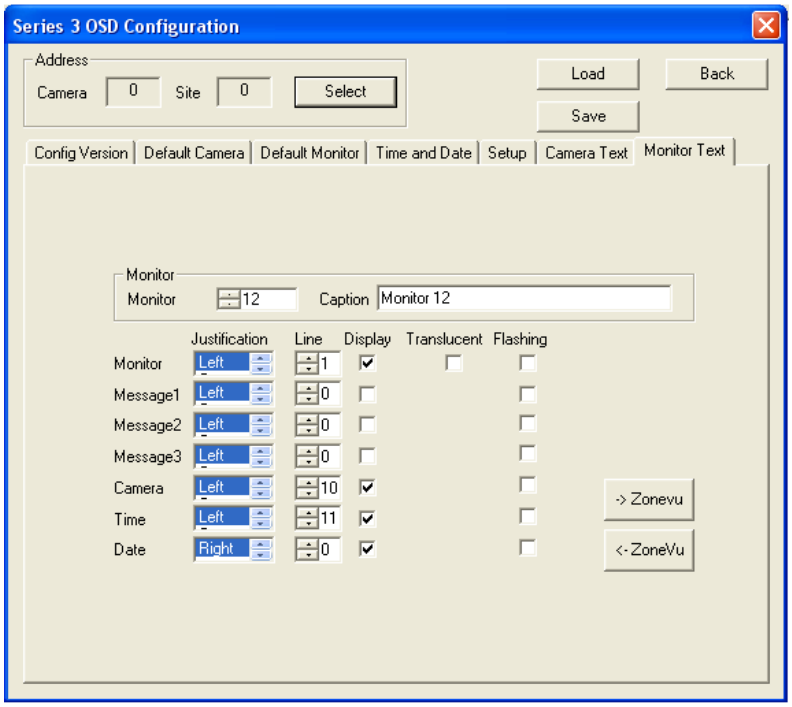
Note: camera captions can also be set to flash using the camera section of the *Default Monitor* or *Monitor Text* screens. Flashing is enabled if **either** of these boxes are ticked.

Display
Flag to indicate if the caption should be displayed (ticked – display on)

Default = On

Note: camera captions can also be disabled using the camera section of the *Default Monitor* or *Monitor Text* screens. The caption is disabled if **either** of these boxes are un-ticked.

Monitor Text



The caption and appearance can be configured for each monitor output. Unlike other Mpower configuration screens, when the transfer buttons are pressed only the currently selected monitor caption information is transferred between Mpower and the ZVS3-VTM

Monitor

Caption

The caption, max length is 28 characters. Unlike the default caption the monitor number is not appended to the text.

Default = ""

To prevent the default monitor text being displayed on a monitor, a caption must be configured. If a monitor output requires configuration, then it is necessary to specifically indicate the required caption. Leaving the entry blank will indicate that the default caption is required. To indicate a blank caption then this can be achieved by typing in a <space> character.

Justification

Text justification (left, right or centre)

Default = Left

Line

Line number for caption (1 to 16)

Default = 1

Display

Flag to indicate if the caption should be displayed (ticked – display on)

Default = On

Translucent

Text appearance - translucent or opaque. (ticked = translucent on)

Default = Off (opaque)

Flashing

A flag to indicate if the caption should be flashing (ticked = flashing on)

Default = Off (unticked)

Message 1. Message 2, Message 3

Future feature.

Camera, Time, Date

Justification

Text justification (left, right or centre)

Default = Left

Line
Line number for caption (1 to 16)
Default = 1

Display
Flag to indicate if the caption should be displayed (ticked – display on)
Default = On

Note : for Camera text this option is also controlled by the *Display* setting on the Default camera or camera text screens.

Flashing
A flag to indicate if the caption should be flashing (ticked = flashing on)
Default = Off (unticked)

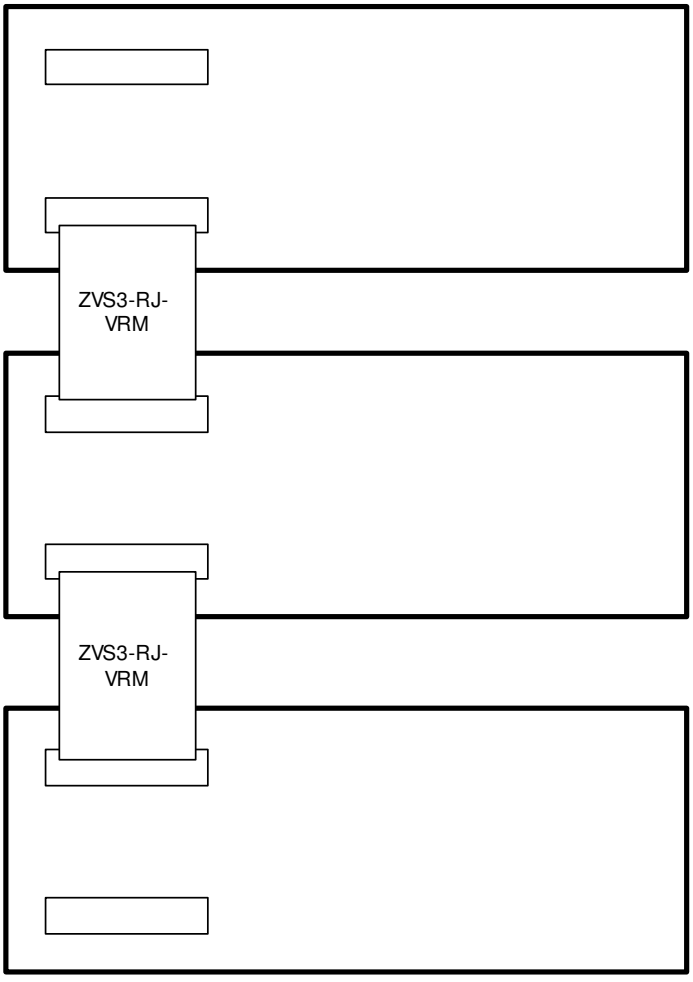
Note : for Camera text this option is also controlled by the *Flashing* setting on the Default camera or camera text screens.

Expanding the Series 3 Video Matrix

Expanding the ZoneVu Series 3 video matrix system is straightforward. With only three modules to consider, the ZVS3-VRM, ZVS3-VOTM and ZVS-PSU-x the concept of expansion is simple to understand.

In a video matrix system we either want to expand video inputs, video outputs or both. Doing either or both involves bridging inputs and/or outputs. A simple rule to remember is '*To expand video inputs of a matrix we bridge video outputs and to expand video outputs of a matrix we bridge video inputs'.* One thing we should remember at this point is that a video matrix system has to be expanded 'squarely' otherwise it can no longer be considered to be a matrix. This means that if we are expanding a video matrix system from size 128 by 32, (when describing video matrix systems we always quote it by input and then output size) to 256 by 32 we would require an extra ZVS3-VRM fitted with the correct number of routing cards to give us 32 outputs. If we only provided the second ZVS3-VRM with say enough video routing cards for only 16 outputs this would not be a 'square' expansion because monitors connected to outputs 17-32 of the video matrix would still only be able to view video inputs in the range 1-128.

Diagram showing three ZVS3-VRMs bridged on the output side



The diagram on the left depicts three ZVS3-VRM units bridged together via the ZVS3-RJ-VRM cards to construct a video matrix system with up to 384 video inputs and 128 video outputs.

Specifications

Operating temperature	Storage -10^0 to +60^0 C Operational 0^0 to +50^0 C Humidity 10% to 95% non-condensing
Enclosure	Eurorack standard. Aluminium and mild-steel construction.
Dimensions	ZVS3-VRM 19" rack by 5u by 380mm ZVS3-VOTM 19" rack by 3u by 380mm ZVS3-PSU-x 19" rack by 1u by 170mm ZSC-1000 19" rack by 1u by 140mm
Weight	ZVS3-VRM 14.5Kg ZVS3-VOTM 8.1Kg (without OSD option) ZVS3-VOTM 8.5Kg (with OSD option) ZVS3-PSU-x 2Kg ZVS3-PSU-xD 2.6Kg ZSC-1000 1.5Kg
Power ZVS3-PSU-R	Input 99 to 264VAC 50Hz, Output +12VDC, -5VDC
Power ZVS3-PSU-O	Input 99 to 264VAC 50Hz, Output +5VDC, -5VDC
Power ZVS3-PSU-RD	Input 99 to 264VAC 50Hz, Output +12VDC, -5VDC, Dual redundant, ZoneVu alarms.
Power ZVS3-PSU-OD	Input 99 to 264VAC 50Hz, Output +5VDC, -5VDC, Dual redundant, ZoneVu alarms.
Power Consumption	ZVS3-VRM 38W Max. ZVS3-VOTM 32W Max. (without OSD option) ZVS3-VOTM 130W Max. (with OSD option) ZSC-1000 15W Max.
ZoneVu Network Port	RS422 half duplex
Diagnostics and Configuration	Mpower
Bandwidth –3dB	32MHz ZVS3-VRM and ZVS3-VOTM
Bandwidth 0.1dB	10.5MHz ZVS3-VRM and ZVS3-VOTM
Slew rate	160V/uS ZVS3-VRM and ZVS3-VOTM
Differential gain error	< 0.1% ZVS3-VRM and ZVS3-VOTM
Differential phase error	< 0.5% ZVS3-VRM and ZVS3-VOTM
X-talk (all hostile) @ 6MHz	> -60dB
Output isolation @ 6MHz	> -90dB
Signal to Noise	> -63dB ZVS3-VRM and ZVS3-VOTM
Camera Captions	4096 captions 28 characters per caption; Caption justification Left, Centre or Right; Camera text line selection 1-16;Text Flashing, Opaque, Translucent or Off, Default caption configuration
Monitor Captions	128 captions configurable for any monitor in the range 1-2048, 28 characters per caption; Caption justification Left, Centre or Right; Camera text line selection 1-16;Text Flashing, Opaque, Translucent or Off, 3 configurable messages per monitor (future feature)
Dynamic Monitor Captions	Configurable 56 character captions that are managed by an external caption generator.
Dynamic Camera Captions	Configurable 28 character captions that are managed by an external caption generator.
Time and Date Captions	Date format DD/MM/YYYY, DD/MM/YY or Off; Time format HH:MM:SS, HH:MM or Off; Caption justification Left, Centre or Right; Camera text line selection 1-16;Text Flashing, Opaque, Translucent or Off
Video input connectors	Standard BNC
Video output connectors	Standard BNC
Video input	1V p-p nominal
Video output	1V p-p nominal

Video input impedance	75R nominal
Video output impedance	75R nominal
ZVS3-VRM Module size	128 input by 128 output expandable in blocks of 128 inputs and 16 outputs
ZVS3-VOTM Module size	128 outputs expandable in blocks of 4 outputs
Maximum expansion capability	4096 inputs by 2048 outputs
Switching time	Less than 20ms (from receipt of command)

Product Parts (with ordering codes)

System

ZVS3-XXXXXX	Includes ZVS3-VOTM modules, ZVS3-VRM modules, ZVS3-PSU modules, ZVS3-RJ-VRM cards, ZVS3-RJ-VOM cards and ZSC-1000 Series 3 site controller.

Modules

ZVS3-VOTM	ZoneVu Series 3 video matrix buffered output module 128 channel.
ZVS3-VOTM (osd)	ZoneVu Series 3 video matrix On Screen Display output module. 128 channel.
ZVS3-VRM	ZoneVu Series video matrix video routing module. 128 inputs by 128 outputs.
ZVS3-PSU-R	ZoneVu Series 3 module PSU for ZVS3-VRM.
ZVS3-PSU-O	ZoneVu Series 3 module PSU for ZVS3-VOTM.
ZSC-1000plus	ZoneVu Series 3 video site controller.

Options and Expansion Cards

ZVS3-PSU-RD	ZoneVu Series 3 dual redundant power supply with power fail alarms
ZVS3-PSU-OD	ZoneVu Series 3 dual redundant power supply with power fail alarms
ZVS3-VLC-VRM	ZoneVu Series 3 video input loss detection card. 128 channel.
ZVS3-VOA-VOM	ZoneVu Series 3 video output amplifier card
ZVS3-OSD-VTM	ZoneVu Series 3 video output card with On Screen Display
ZVS3-BC1-VRM	ZoneVu Series 3 video input bridging cable. Standard BNC connectors, mini-coax 1 metre length.
ZVS3-T75-VRM	ZoneVu Series 3 video input 75Ohm termination plugs.
ZVS3-RJ-VRM	ZoneVu rack jumper card for expanding inputs between ZVS3-VRM modules.
ZVS3-RJ-VOM	ZoneVu rack jumper card for connecting ZVS3-VRM module video outputs to a ZVS3-VOTM.

Servicing and Support

Servicing

The PRODUCT requires no Planned Preventive Maintenance periods (PPMs), as it is mainly solid state in design.

The PRODUCT contains no serviceable parts and should be returned to our Service Centre in Scunthorpe for repair or replacement under warranty. Any repairs, attempted repairs or replaced components not carried out by the Meyertech Service Centre will void all Meyertech warranties and liabilities.

If your PRODUCT has to be returned to our Service Centre please follow the returns procedure below, otherwise delays may be incurred in returning or replacing the PRODUCT.

Support

At Meyertech our staff understand quality support is important to you, vital in fact, which is why we place such a high precedence on providing it.

For all matters relating to support go to our website to find the information your require visit http://www.meyertech.co.uk/support.html

Diagnostics

Symptom	Likely cause	Solution
Captions displayed in wrong area of screen. Time / Date showing even though switched off.	Temporary loss of power to the ZVS3-VOTM or connection of power to the VOTM after the ZVS3-VRM modules (incorrect power-up order)	Ensure the ZVS3-VRM (for inputs 1 – 128) is switched on after the ZVS3-VOTM. If necessary cycle the power to it.
No captions displayed except 'M001', 'M002' etc.	Break in the cable between ZVS3-VRM (inputs 1 – 128) and ZVS3-VOTM	Remove front panels & bridging cards if necessary. Check for 2-wire cable joining the bottom VRM to the VOTM.
Video output is unstable, partially displaying multiple pictures	Two or more ZVS3-VRM modules are attempting to display different inputs. This may be the result of an incomplete system restore by a 3rd party control system, following a power-up.	The display will correct itself as soon as a camera is selected on that output. No further action is required - there is no risk of damage from this condition
Collection of cross points no longer working - Specific monitor outputs not showing video from any input	ZVS3-VOTM failure: 1. Power failure 2. Module failure	Verify ZVS3-PSU-O and power cycle the ZVS3-VOTM To replace the ZVS3-VOTM, contact **Meyertech Service Centre.**
Collection of cross points no longer working - Specific monitor outputs not showing specific video inputs	ZVS3-VRM failure: 1. Power failure 2. Module failure	Verify ZVS3-PSU-R and power cycle the ZVS3-VRM To replace the ZVS3-VRM, contact **Meyertech Service Centre.**
Video matrix is not switching	ZSC-1000 not connected or powered.	Verify PSU, data connections and power cycle the ZSC-1000 To replace the ZSC-1000, contact **Meyertech Service Centre.**
Reduced video signal on a specific range of video inputs (128)	ZVS3-VRM module failure **note this symptom only applies in one specific failure mode and can be resolved by powering off the suspect ZVS3-VRM**	Verify ZVS3-PSU-R and power cycle the ZVS3-VRM To replace the ZVS3-VRM, contact **Meyertech Service Centre.**

Fault	Likely symptoms	Solution
ZVS3-VRM failure	Specific range of video inputs (128) not being displayed on a specific range of monitor outputs (128)	Verify ZVS3-PSU-R and power cycle the ZVS3-VRM To replace the ZVS3-VRM, contact **Meyertech Service Centre.**
ZVS3-VOTM failure	Not able to switch any video inputs to a specific range (128) of monitor outputs.	Verify ZVS3-PSU-O and power cycle the ZVS3-VOTM To replace the ZVS3-VOTM, contact **Meyertech Service Centre.**
ZVS3-PSU-R failure	Specific range of video inputs (128) not being displayed on a specific range of monitor outputs (128) No LEDs illuminated on ZVS3-VRM or associated ZVS3-PSU-R	Verify ZVS3-PSU-R and power cycle the ZVS3-VRM To replace the ZVS3-PSU-R, contact **Meyertech Service Centre.**
ZVS3-PSU-O failure	Not able to switch any video inputs to a specific range (128) of monitor outputs. No LEDs illuminated on ZVS3-VOTM or associated ZVS3-PSU-O	Verify ZVS3-PSU-O and power cycle the ZVS3-VOTM To replace the ZVS3-PSU-O, contact **Meyertech Service Centre.**
ZSC-1000 failure	Inability to switch cross-points. Unusual behaviour of LEDs	Verify PSU and power cycle the ZSC-1000plus To replace the ZSC-1000plus, contact **Meyertech Service Centre.**

Disposal

There are no additional requirements beyond safe working practice in the decommissioning of the Meyertech Series 3 Matrix.

However the Series 3 Matrix contains printed circuit boards populated with electronic components. The whole unit must be returned to **Meyertech Service Centre** for final disposal. Please follow the normal returns procedure.

Shipping and Handling

- The Series 3 Matrix must always be transported with the internal bridging cards removed; this applies when being shipped in modular or rack form.
- The Series 3 Matrix bridging cards should be packaged separately from the matrix modules.
- If there is a requirement to remove prior to returning, an individual Series 3 matrix module from an assembled rack, please note that the interconnecting bridging cards must be removed prior to removal of the module. The bridging cards are accessible by removing the faceplates of the modules.
- If there is a requirement to remove prior to returning, an individual VRM or VOTM cassette from their chassis, then follow the instructions detailed below.
- Meyertech holds no responsibility for damaged equipment though unsuitable transportation or handling.

Removal and Refitting of a cassette.

IMPORTANT: If you believe a VRM cassette requires removing prior to return, only do so after consulting the Meyertech Support Centre.

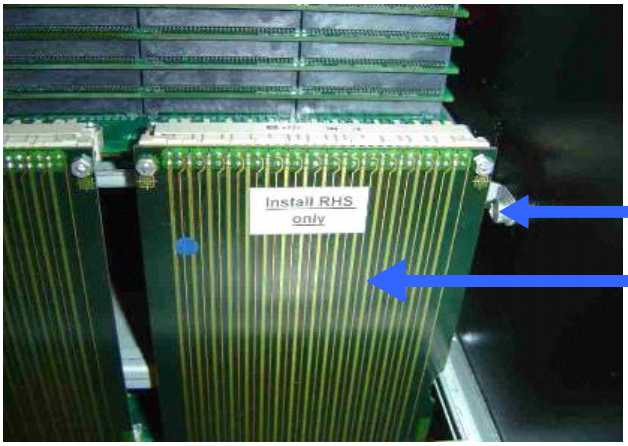
The removal and refit of the VRM cassette should only be carried out by competent and trained engineers.

To remove the VRM cassette:

- Remove all local bridging cards
- Remove the two retaining bolts at either side (see diagrams)
- Remove the retaining pins at either side (see diagrams)
- Disconnect the interface cable connecting the VRM cassette as power board (see diagrams)
- Ease and then be slide the whole cassette with care.
- Reinsert bolts and pins for use when refitting cassette.

To refit the VRM cassette:

- With bolts and retaining pins removed, ease the cassette into the chassis, along its guide rails.
- Push the cassette home firmly and smoothly, taking care not to bend any pins.
- Once the cassette is inserted, refit the retaining clips and bolts.
- Refit the interface cable between the cassette and power board.



Bolt

Bridging Card

Retaining Pin

25 Way D-type

Warranty

Please refer to Meyertech Limited 'Terms & Conditions of Sale of Goods & Services' for interpretation.

1. If the Buyer establishes to the Seller's reasonable satisfaction that there is a defect in the materials or workmanship of the Goods manufactured, then the Seller shall at its option, at its sole discretion and within a reasonable time,
    a. arrange for the repair or making good such defect or failure in such Goods free of charge to the Buyer (including all costs of transportation of any Goods or materials to and from the Buyer for that purpose),
    b. replace such Goods with Goods which are in all respects in accordance with the Contract, or subject, in every case, to the remaining provisions of this Condition 1 provided that the liability of the Seller under this Condition 1 shall in no event exceed the purchase price of such Goods and performance of anyone of the above options shall constitute an entire discharge of the Seller's liability under this warranty.

2. Condition 1 shall not apply unless the Buyer:

    a. notifies the Seller in writing of the alleged defect within 12 (twelve) months from delivery or such other period or periods as may be agreed in writing between the Seller and the Buyer, and
    b. allows the Seller a reasonable opportunity to inspect the relevant Goods.

3. For the avoidance of doubt, the Seller shall be under no liability under the warranty in Condition 1 above:
    a. where such defects arise from any drawing, design or specification supplied by the Buyer; or
    b. where such defects arise from fair wear and tear, wilful damage, or negligence of a party other than the Seller (or its employees or authorised personnel), abnormal working conditions, failure to follow the Seller's instructions (whether oral or in writing), misuse or alteration or repair of the Goods without the Seller's approval; or
    c. where such defects arise in parts, materials or equipment which have not been manufactured or designed by the Seller but have been purchased at the Buyer's request by the Seller from the Buyer's designer and manufacturer or from some other third party (the **"Third Party Supplier").**
    d. if the total price of the Goods has not been paid by the due date for payment
    e. in respect of any type of defect, damage or wear specifically excluded by the Seller by notice in writing: or
    f. if the Buyer makes any further use of the Goods after giving notice in accordance with Clause 1

4. Any repaired or replaced Goods shall be redelivered to the Buyer free of charge to the original point of delivery but otherwise in accordance with and subject to these Conditions.

5. Alternatively to Condition 1 the Seller shall be entitled at its absolute discretion on return of the defective Goods to the Seller (at the Seller's request) to refund the price of the defective Goods in the event that such price shall already have been paid by the Buyer to the Seller, or, if such price has not been paid, to relieve the Buyer of all obligation to pay the sum by the issue of a credit note in favour of the Buyer in the amount of such price.

6. In respect of all Goods supplied to the Seller by a Third Party Supplier the Seller will on request pass on to the Buyer (in so far as reasonably possible) the benefit of any warranty given to the Seller by such Third Party Supplier and will (on request) supply to the Buyer details of the terms and conditions of such warranty and copies of any relevant product information sheets, technical data sheets or product leaflets issued by such Third

Party Supplier and the Buyer shall be solely responsible to the entire exclusion of the Seller for complying with the same.

7. For the purposes of Condition 1 references to Goods shall be deemed to exclude software.

8. The Buyer acknowledges that software in general is not error-free and agrees that the existence of such errors in the Software Programs shall not constitute a breach of this Contract.

9. In the event that the Buyer discovers a material error which results in the Programmed Products not performing substantially in accordance with the Functional Specification, or the Licensed Programs not performing substantially in accordance with the relevant Program Documentation and notifies the Seller of the error within 90 days from the date of the Seller making available the respective software to the Buyer (the **`warranty period"**) the Seller shall at its sole option either refund the price which the Buyer has paid to the Seller (or if such price has not been paid, relieve the Buyer of all obligations to pay the sum) in respect of the respective software or use all reasonable endeavours to correct by patch or new release (at its option) that part of the software which does not so comply provided that such non-compliance has not been caused by any modification, variation or addition to the software not performed by the Seller or caused by its incorrect use, abuse or corruption of the software by use of the software with other software or on equipment with which it is incompatible,

10. To the extent permitted by English law, the Seller disclaims all other warranties, with respect to the software which it provides pursuant to the Contract, either express or implied, including but not limited to any implied warranties of satisfactory quality or fitness for any particular purpose.

11. The Buyer is solely responsible for various scanning the software that it receives from the Seller pursuant to the Contract.

12. The Seller warrants that it will use reasonable skill and care in providing the Services to the buyer